



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

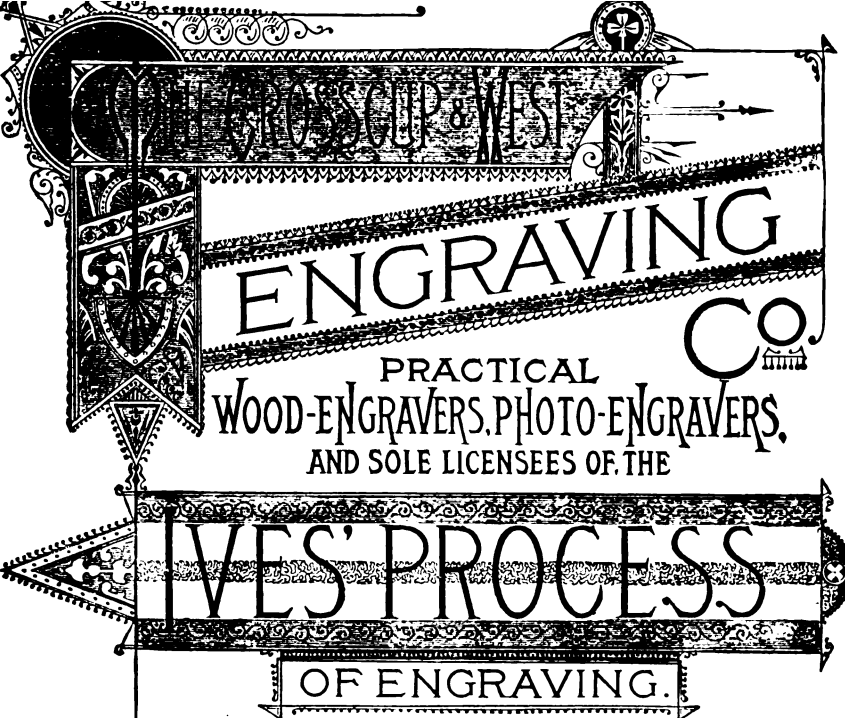
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



702 CHESTNUT ST., PHILADELPHIA.

THE IVES' PROCESS, THE LATEST INVENTION IN ENGRAVING. PAT. FEB. 8, 1881 & AUG. 9, 1881.

ENGRAVINGS MADE DIRECT FROM NATURE, PHOTOGRAPHS OR DRAWINGS MADE WITH BRUSH.

NO PENCIL DRAWING REQUIRED.

NO HAND FINISHING BY THE ENGRAVER NECESSARY.

Photographic mosaics

Edward Livingston Wilson, Mathew Carey Lea





DIAMOND

Gelatine Plates.

Trade Mark.

During the past season an entirely new formula and improved methods of manipulation have been adopted, and a comparison with any other make is confidently challenged in the following particulars: Rapidity, uniformity, ease, and simplicity of working; freedom from defects; brilliancy and clearness of shadow, with facility for obtaining any desired intensity. Negatives made on these plates have all the brilliancy and clearness of wet collodion. The plates are equally well suited for development by pyro and ammonia or by ferrous oxalate, according to the preference of the operator. Formulæ for both are supplied with each package. Every batch is carefully tested and inspected before being packed, and any lot found to be defective is at once cleaned off. Having recently enlarged my plant, I hope in future to fill all orders promptly.

From numerous testimonials received, we have space here only for the following:

BOSTON, November 1, 1882.

MR. CHAS. F. RICHARDSON—*Dear Sir:* I have used your dry plates in competition with the best-known brands, and have found them reliable, possessing all the qualities required to produce good negatives.

Yours truly,

J. W. BLACK.

If your dealer will not supply you with these plates, write directly to the undersigned, and receive *Special Terms*, which will be made so favorable as to bring them within reach of every photographer.

The smaller sizes will be packed in dozens; 8 x 10 inches and upwards in half-dozens and dozens.

PRICE LIST.

<i>Size of Plates.</i>	<i>Per Dozen.</i>	<i>Size of Plates.</i>	<i>Per Dozen.</i>
3¼ x 4¼ inches.....	\$0 65	8 x 10 inches.....	\$3 50
4 x 5 ".....	0 90	10 x 12 ".....	5 00
4¼ x 5½ ".....	1 00	11 x 14 ".....	7 00
4¾ x 6½ ".....	1 25	13 x 16 ".....	9 00
5 x 7 ".....	1 50	14 x 17 " double thick glass.....	10 00
5 x 8 ".....	1 75	18 x 22 " " ".....	20 00
6½ x 8½ ".....	2 25	20 x 24 " " ".....	25 00

To be obtained from every dealer in the United States, or direct from the manufacturer. Cash to invariably accompany the order. A liberal discount to dealers and large consumers. Special contracts made for regular supplies.

Full directions for developing, fixing, etc., accompany each package.

MANUFACTURED BY
C. F. RICHARDSON,
LEOMINSTER, MASS.

→*NEW DRESDEN*←

EXTRA
BRILLIANT



AND
SINGLE

ALBUMEN PAPER.

WHITE, PINK,

PEARL, PENSÉ.

FREE FROM BLISTERS AND IMPERFECTIONS.

IMPORTED BY G. GENNERT,

EASTERN AGENT FOR

CRAMER & NORDEN DRY PLATES.

MANUFACTURER OF THE NEWLY PATENTED

Paper Dry-Plate Holders and Scofield's Pneumatic Shutter,

THE BEST AND MOST SIMPLE INVENTIONS.

105 WILLIAM STREET, NEW YORK.

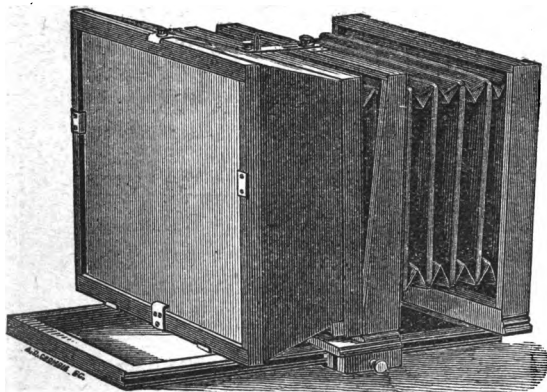
FOR SALE BY ALL DEALERS.

iii

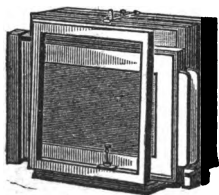
THE NEW AND POPULAR CANDIDATE!

THE BLAIR COMBINATION CAMERA!

The most perfect, handsome, and useful Camera ever placed on the American market. It is fitted with rack and pinion, improved set-screw, rising and falling front (both ways), single swing, stereo, division, extra front for stereo, lenses, and in every detail is of the highest order of workmanship. Made of the best mahogany and cherry, highly polished, and handsomely trimmed with nickel-plated mountings.



Camera with extension applied.



Camera folded.

It is acknowledged by manufacturer, dealer and user to be **A1** in every respect. THE COMBINATION consists in our **PATENT EXTENSION**, which admits making an 8 x 10 picture on a 5 x 8 Camera, etc. This is one of the simplest devices, which accomplishes a great end, ever employed in photography, and makes the B. C. C. an instrument unequalled in America.

The **Plate Holder** is another model of simplicity and perfection. No grooves to fit the plate into, no partition to slide in, no possible chance for the plate to get out after once placed in position, fitted for nests any size under that of the Plate Holder: thus, with a 5 x 8 Combination Camera and Extension, all sizes, from 3 1/4 x 4 1/4 up to 8 x 10 can be taken. Both

Camera and Extension are each inclosed in a fine imt. Morocco case.

The Triumph Camera, of the same style and finish as the Combination, but smaller in outside dimensions, and not adapted for the extension. PRICE, \$27.00.

The Triumph Drop Shutter, adapted to use with our Cameras. PRICE, 4 x 5, \$2.50; 5 x 8, \$3.00. This shutter is attached to the Camera, not to the lens, thus avoiding the danger of injuring the glasses.

The Knockdown Camera. The Camera for the morning walk, weighs 1 1/2 pounds, and carries eight plates, supplied with Extension Tripod and Achromatic Lens. PRICE, \$10.00.

The Celebrated Tourograph. PRICE, complete, with Lens and Tripod, from \$33.00 to \$15.00. Tripods of all styles. Dry-plate Cameras and Outfits for Amateurs a Specialty. **THE TRIUMPH PLATES** are excelled by none.

THE BLAIR TOUROGRAPH AND DRY-PLATE CO.,

iv 471-73 Tremont St., Boston, Mass.

PRICE LIST.	
Camera Proper, 5 x 8,	\$28 00
Extension for same, 8 x 10,	8 00
Complete in one order,	35 00
Camera Proper, 4 x 5,	20 00
Extension for same, 5 x 8,	6 00
Complete together,	25 00
Extra Plate Holders, 8 x 10,	3 50
Extra Plate Holders, 5 x 8,	2 50
Nests, 3 1/4 x 4 1/4, 4 x 5, 4 1/2 x 6 1/2,	3 00
4 1/2 x 5 1/2, each,	30

Get the Best!

CRAMER & NORDEN'S

ST. LOUIS

Extra Rapid Dry Plates.

WARRANTED PERFECT,

With Latest Formulas and Complete Directions for Use.

—FOR SALE BY—

G. GENNERT, 105 William Street,
New York, General Eastern Agent.
SCOVILL MFG. CO., 419 Broome
Street, New York.

ALLEN BROS., Detroit, Mich.

H. C. FRANTZ, Toledo, Ohio.

E. J. WECKS, Jackson, Mich.

JOHN I. SHAW, Pittsburg Pa.

DAVID TUCKER & CO., Buffalo,
N. Y.

H. D. MARKS, Rochester, N. Y.

I. N. McDONALD, Albany, N. Y.

THOS. H. McCOLLIN, Philadelphia,
Pa.

WOLF & CHEYNEY, Philadelphia,
Pa.

WILSON, HOOD & CO., Philadel-
phia, Pa.

RICHARD WALZL, Baltimore, Md.

BACHRACH BROS., Baltimore, Md.

JAMES LETT, Harrisburg, Pa.

BENJ. FRENCH & CO., Boston,
Mass.

C. H. CODMAN & CO., Boston,

BLESSING BROTHERS, Galves-
ton, Texas.

S. T. BLESSING, New Orleans, La.

THEO. SCHUMANN, Atlanta, Ga.

W. G. ROBINSON, Atlanta, Ga.

J. H. KIRK, Wheeling, W. Va.

J. D. DEXTER, Portland, Me.

GEO. R. ANGELL, Detroit, Mich.

GUSTAV BODE, Milwaukee, Wis.

WM. S. CONNER, Pittsburg, Pa.

DOUGLASS, THOMPSON & CO.,
Chicago.

HIRAM J. THOMPSON, Chicago.

N. C. THAYER & CO., Chicago.

C. F. RICE, Chicago.

J. V. ESCOTT & SONS, Louisville,
Ky.

W. D. GATCHEL & CO., Louisville,
Ky.

W. J. HAZENSTAB, St. Louis.

H. A. HYATT, St. Louis.

J. C. SOMERVILLE, St. Louis.

J. F. INDERMILL, St. Joseph, Mo.

JORDAN & SHEEN, Cincinnati, O.

P. SMITH & CO., Cincinnati, O.

P. SMITH & CO., Columbus, O.

H. LIEBER & CO., Indianapolis, Ind.

A. BLACK & CO., Indianapolis, Ind.

MULLETT BROS., Kansas City, Mo.

JAS. H. SMITH, Quincy, Ill.

SARGENT & CO., Cleveland, O.

JOHN E. TEAL, Cleveland, O.

ZIMMERMAN & BROS., St. Paul,
Minn.

McINTYRE & CO., London, Ont.

PECK BROS., Grand Rapids, Mich.

SAM'L PARTRIDGE, San Francisco,
Cal.

GEO. W. SITTLER, Springfield, Mo.

G. MOSES, New Orleans, La.

NEIDHARDT'S Gelatine Dry Plates

❖ GUARANTEED EQUAL TO ANY IN THE MARKET. ❖

The magnificent display of pictures made on these Plates by various Photographers at the INDIANAPOLIS CONVENTION last month, convinced all who saw them that the

"Neidhardt Plate can't be beaten."

FORMULA FOR WORKING THEM, FREE.

 TRY OUR "NEW" DEVELOPER.

PRICES OF NEIDHARDT'S PLATES.

Size.	Per Doz.	Size.	Per Doz.
3½ x 4½,	\$0 65	6½ x 8½,	\$2 40
4 x 5,	95	8 x 10,	3 60
4½ x 5½,	1 00	10 x 12,	5 20
4½ x 6½,	1 25	11 x 14,	6 80
5 x 6,	1 35	14 x 17,	10 00
5 x 7,	1 65	17 x 20,	17 50
5½ x 7,	1 75	18 x 22,	20 00
5 x 8,	1 85	20 x 24,	24 00

11x14 and larger packed in boxes containing half-dozen.

MANUFACTURED BY THE

GARDEN CITY DRY PLATE COMPANY,

No. 361 MILWAUKEE AVE., CHICAGO.

Order from your Stockdealer; if they can't supply you, apply to us.

—A NEW CANDIDATE.—

The Excelsior Dry Plate,

MANUFACTURED BY THE

ST. LOUIS DRY PLATE CO.,

3509-9½-11 & 11½ Broadway,

Office and Salesroom, 918 Olive St., ST. LOUIS, MO.

SOLD BY ALL STOCKDEALERS.

“Excelsior Dry Plates can’t be beaten,”

SIGNED BY

JOHN A. SCHOLTEN, 920 Olive Street.

A. J. FOX, 916 Olive Street.

FITZ W. GUERIN, 627 Olive Street.

GENILE, 923 Olive Street.

J. W. FISCHER, 9th and Franklin Ave.

The above Testimonial from a few of our Photographers here.

SEND FOR NEW CATALOGUE OF PHOTOGRAPHIC GOODS,

JUST OUT.

ALSO, FOR BARGAIN LIST.

W. J. HAZENSTAB, 918 Olive St., St. Louis, Mo.

vii

THE "HOVEY" AND "PEERLESS" BRANDS OF PAPER,

Are Albumenized with Fresh Albumen. Each sheet will cut into

—FIFTEEN CABINET CARDS—

Therefore the Cheapest Paper to use.

FOR SALE BY ALL DEALERS, AND MANUFACTURED IN ALL SHADES BY THE
AMERICAN ALBUMEN PAPER CO.,
ROCHESTER, N. Y.

1883.

1883 notation R.D.
5.27.17. R.C.

PHOTOGRAPHIC

MOSAICS:

An Annual Record of Photographic Progress.

EDITED BY

EDWARD L. WILSON,

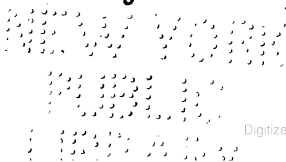
Editor of the Philadelphia Photographer.

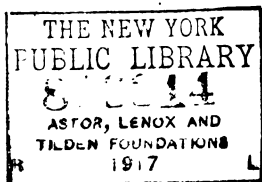


PHILADELPHIA:

EDWARD L. WILSON.

1883.





Entered according to Act of Congress, in the year 1883,

By EDWARD L. WILSON,

In the Office of the Librarian of Congress, at Washington, D. C.



PUBLISHER'S NOTICE

18 May 1912.
* J. A. Callaghan
It is my pleasure and privilege again to thank the generous staff of contributors who have helped me to make up my nineteenth Mosaics. Their papers are gems this year, whose facets shine gloriously and usefully, no matter how you turn them and read them.

Just such generous conduct as this is what makes photography *grow* so handsomely, and what gains it fame and name more surely and quickly than anything else. This is so, because it proves that *big hearts* are engaged in our work now, and you all know that *heart* in *anything* is sure to make it go and go well. Hearty thanks, then, good friends, and long may you live to be useful and prosperous.

Sincerely yours,

EDWARD L. WILSON.

PHILADELPHIA, December, 1882.

CONTENTS.

	PAGE
Concerning 1882,	9
On Intensifying Bromo-gelatine Negatives. By WM. H. RAU,	30
The Yellow Precipitate from the Ferrous Oxalate Developer. By H. D. GARRISON, M.D.,	35
Producing Artistic Effects in Photography. By W. IRVING ADAMS,	36
The Silver Printing Bath. By W. H. SHERMAN,	38
Something Practical. By M. L. DAGGETT,	40
Negative Retouching. By WM. McLAUGHLIN,	42
A Method of Mounting Photographs. By E. BIERSTADT,	48
Science Misapplied. By ELLERSLIE WALLACE, JR.,	49
Things I Don't Like to See. By J. H. HALLENBECK,	51
A Word for Dr. Van Monckhoven's Ferrous Oxalate Developer. By J. H. SCOTTFORD.	53
Dry-plate Notes. By C. F. RICHARDSON,	55
On the Use of Salicylic Acid in the Pyro Developer. By D. BACH- RACH, JR.,	57
Yellow Glass for the Emulsion Dark-room. By J. HARMANUS FISHER,	58
A Portable and Folding Dark-Room for Dry-plate Work. By GEO. H. JOHNSON,	59
Oxalate or Pyro? By GEO. H. MONROE,	61
Dry-plate Practice. By E. P. LIBBY,	65
A Word or Two. By FRANK THOMAS,	67
Considering Everything, I Like it. By WM. McCOMB,	69
Developing Common Gelatine Plates in the Tropics. By J. TRAILL TAYLOR,	70
Gems from Germany. By DR. H. W. VOGEL,	71
French Photographic Fancies. By LEON VIDAL,	77
Bits. By E. POOLE,	80
Stand by the Price. By J. F. RYDER,	83
Please Pay in Advance. By WELL G. SINGHI,	84
Business vs. Art. By E. D. ORMSBY,	85
Three Things that may be Worth a Dollar to Some One to Know. By F. M. SPENCER,	86
On the Toning of Ready Sensitized Albumen Paper. By KARL KLAUSER,	87
Learning by Mishaps. By E. LONG,	88
Dry Plates, or What? By T. M. SCHLEIER,	89
A Few Reflections. By J. E. BEEBE,	90

	PAGE
Business <i>vs.</i> Business. By H. S. KELLER,	93
Simple Things, by a Simple Man. By O. PIERRE HAVENS,	94
Selection of Objectives.	96
Photography and Pluck. By H. MULLER,	102
Do your Best. By MRS. E. N. LOCKWOOD,	104
Does it Pay. By S. D. WAGER,	105
Our Prices. By W. J. HILLMAN,	106
How to Save Old Ferro-Plates. By H. M. BEELES.	107
Tablets <i>vs.</i> Note-book. By R. E. WOOD,	108
My Experience with Gelatine Bromide. By EDWARD H. FOX,	109
The Amateur and the Professional. By M. H. ALBEE,	111
My Way—Not New, but Good. By A. W. CADMAN,	113
Health. By C. J. BILLINGHURST,	114
Printing on Plain Paper. By JOHN R. CLEMONS,	115
How to Save the Iron Trays. By GEORGE PINE,	116
Thoughts from my Printing-room. By J. H. REUVERS,	116
The Prussian Blue Printing Process. By DR. H. VOGEL,	117
The "Howell" Collodion. By "WE,"	119
Cyanide Poisoning. By C. S. GERMAN,	120
Why are Gelatine Plates more Sensitive than Collodion. By D. BACHRACH, JR.,	121
Try the New Friend—We mean the Dry-plate. By G. W. SITTLER,	123
The Difference. By J. H. REUVERS,	124
Photographic Furniture and Accessories. By O. T. BLOOD,	125
Photography and Oratory. By E. L. W. B.,	127
The Littleness of Great Things. By SOLOMON JOHNSON,	128
M. E., or Master in Emulsion. By F. C. PHILLIPS,	129
Why Is It. By H. H. FLANAGIN,	130
Defects in Vignetting. By A. H. ATTWOOD,	131
Orange the Only True Light for Dark-Rooms. By WM. CURTIS TAYLOR,	132
Reducing Gelatine Plates. By R. BENECKE,	133
To Pour a Bath Solution. By EMERSON GODDARD,	133
Progress—Or Otherwise? By J. PITCHER SPOONER,	134
Dry-plate Developers. By A. HESLER,	134
Save Your Fixing Solutions! By D. H. CROSS,	137
Pyrogallie Development. By GEORGE SPERRY,	138
A Peck at You. By C. S. PECK,	139
Extra Pay for Retaking Negatives. By H. W. IMMKE,	140
A Few Words of Advice. By J. A. W. PITTMANN,	141
Many Mites from Many Lands. By EDWARD L. WILSON,	143



PHOTOGRAPHIC MOSAICS.

1883.

CONCERNING 1882.

SOMETIMES it requires a good deal of courage to look back. Especially is this the case when the past has not been characterized by anything particularly meritorious or worthy of being looked upon with pride and satisfaction.

But we have no such fear in looking back upon so much of the year 1882 as has already passed into eternity at this writing. On the contrary, there is much to rejoice over in the way of progress and growth, and much for which to be thankful. The year has been one of prosperity, and will serve as a stepping-stone to greater results being accomplished in art and in a business way by photography. Indeed, the past year seems like the scene painted so beautifully by Rogers in his "*Italy*:"

"Along the sacred way
Hither the triumph came, and, winding round
With acclamation, and the martial clang
Of instruments, and cars laden with spoil,
Stopped at the sacred stair that then appeared;
Then thro' the darkness broke ample star-bright,
As tho' it lead to heaven."

For many triumphs have been made by our art worthy to be followed by much of "acclamation." The "cars" of our art are, indeed, "laden with spoil;" and could we indeed carry them

along the great stairs that appeared in the olden time in the land of art we should receive much praise. The photographer who has persevered and studied and practised diligently has had satisfactory success both in his resulting work and in the additional weight of his exchequer. And yet, there have been exceptions. While the victor has worthily received the praises which he earned, there have been those who have failed and have gone back rather than progressed. Such facts compel us to again draw upon our poet for a simile :

“But what are they
Who at the foot withdraw, a mournful train
In fetters? And who, yet incredulous,
Now gazing wildly 'round, now on his sons,
On those so young, well pleased with all they see,
Staggers along, the last? They are the fallen,
Those who were spared to grace the chariot-wheels;
And there they parted, where the road divides,
The victor and the vanquished there withdrew,
He to the festal board, and they to die.”

And so, indeed, it has been; he of the little price, and of the lesser courage, and of the still less spunk, and yet smaller faith in his art, has had to stand back, to “withdraw” and “join the mournful train.” Strong fetters will hold him down to the end of time, because progress is not his friend and art doth hover over him with no tender mercy or inspiration. He is “fallen,” alas! and he has had to photographically die. All this is as it should be, for honest effort ever deserves success. If the photographer would be self-respecting and respected, it is just as sure that he must give attention to everything which will enable him to improve his work. Just as truly so as it is true that air and good water are necessary to his life and health. Thank the good guidance which directs the growth of art in our land, everything looks prosperous in this direction. Photography is imbibing more and more each year of art principles, which in turn bubble up as they are wanted, and make themselves apparent in the results produced. This gives us courage to go on, and to uphold the honor of our profession, to keep its head up among the arts, and to acknowledge ourselves no longer with

fear or shame as photographers. These things being so, let us consider, for a little bit, what special facts may give us encouragement in the line of

ART.

It is our habit in making up these reviews of the years past, to look back to our own magazine, the *Philadelphia Photographer*, and from its pages gather such points as will help us work up our subject. We do this because that magazine is a very good epitome of the year's work. Besides, were we to review all of the photographic literature that was published during the past year we should more than fill our little book, and crowd out those who have better things to say. One of the great encouragements which we have in the art direction is, that the public in general are more and more aware that photographers themselves are more ambitious in the art direction than they have hitherto been.

There is nothing which inspires confidence so readily and so surely as the belief that the photographer understands what he is about. The public is often better informed than he is, and will receive some of his blunders and mistakes with considerable disgust and loss of confidence. But if he shows himself a master of his work, he will, on the contrary, excite not only confidence, but admiration and trust. On that hinges much of his success. He should never allow his enthusiasm to go down, or in the least way show his ignorance. Never forgetting this, he is *bound* to have success.

Another encouragement in the art direction, has been the fact that during the year an immense number of amateurs have joined our ranks. Some have feared that this would injure our business prospects. Certainly it does not appear to have done so. The "amateur craze," so to speak, has brought into photography an immense amount of useful talent and intelligence, judgment and worth, with a great deal of good for our art which is bound to be of great assistance to practical photographers.

Dr. VOGEL has said in one of his letters: "Surely, this cannot harm American photographers any more than amateur musicians can harm the cause of music. In no place does

music reach such a high state as in our country, and yet in no country are there so many musical amateurs as in Germany. So it will be in photography in America."

Perhaps no country can show such a large list of amateur talent as America; and so we shall see no country in the world equalling America in photography. Indeed as we happen to know, in all parts of Europe specimens of portraiture of American photographers are sought for and liberally purchased, because displayed in many of the best shops in the European capitals. 'All of this is certainly very encouraging.

Last year it was our privilege to describe a new picture that had been introduced, namely, the "Tadema," first brought to our notice by Mr. ALVA PEARSALL, of Brooklyn, N. Y. The specimens that have reached us since then, and others exhibited at the late Convention of Photographers, in Indianapolis, show that the new style has met with a good deal of favor, and that some beautiful results have been secured. To produce it, however, was by no means an easy task, as will be seen by the description given in our Introductory to *Mosaics* last year. But we are sure it has done good, and is continuing to do so, although it may never become an exceedingly popular picture. We predict a great deal of favor for another new style which has come to us within a few days of the present writing from Mr. F. B. CLENCH, photographer at Lockport, N. Y. It is christened by him "*The Plaque*." The dimensions of "*The Plaque*" are the same as the cabinet picture. The vignette portrait is made, printed within a circle nearly four inches in diameter, and then depressed by means of an embossing or "Cameo" machine. The borders are tinted a beautiful gray or cream color, and the picture is mounted on a card with peculiar designs upon it, which may vary to suit the tastes of the artists using them. Other sizes will doubtless follow.

All the specimens before us now with which we have been favored by the inventor have, at the upper left-hand corner and reaching nearly across the top, a beautiful lithographic design surrounding the words "*The Plaque*." A similar design is at the lower right hand, reaching nearly to the left, with the monogram of the artist in the right-hand lower corner. Beneath all

this is the name and the address of the photographer. Mr. CLENCH has applied for a patent for his invention, and proposes to share its advantages with the craft for a slight royalty.

Certainly we have seen nothing more tasteful or beautiful for a long time than these pictures are, and we predict for them more than a good run.

Mr. CLENCH writes us that he has expended much time and experiment over the matter, of which we have no doubt, and certainly he has worked up a great success. His advertisement will probably appear in another place in this work, by which it may be seen that others than himself may reap the advantages of his invention.

It ought to be a great holiday picture.

One of the hardest cracks which art has had during the past year is very plainly revealed by Commissioner STOREY in his report as the United States Commissioner to the Paris Universal Exposition, in 1878. Those who have this report will have already noticed to what we refer, and those who have not will find a more extended synopsis in the *Philadelphia Photographer* for March, page 72. Commenting upon Uncle Sam's refusal to encourage the growth of art, as compared with the action of other foreign governments, Mr. STOREY calls him "penny-wise and pound-foolish." Among other good things he says, "Some small consideration has ever been paid in America to her own achievements in the fine arts in any International Exhibition, and this is the first in which our country has formally excluded sculpture.

"With most Nations the development of the fine arts has ever been looked upon as a valuable part of their exhibition; no pains have been spared to render them attractive, no expense refused to give it importance and completeness. It is here that the highest laurels have been won, and in the success and distinction of their artists all other nations have felt the warmest interest and pride. We have treated art with indifference, if not contempt, highly neglected its claims and frequently refused any outlay of money to advance its interests. What we have done has been incompletely done and grudgingly done. If we are a great country, as we justly claim to be, let us behave like

a great country. Is it creditable for us with all our wealth and prosperity to be without a great national museum and academy of art such as is to be found in every great capital of Europe? How can we expect to take rank in art with the great nations in Europe when neither the United States itself nor any State in the Union possesses a gallery of art of which any second-rate government in Europe would not be ashamed? While we have none, can we without mortification look at the magnificent collections abroad and forget the manner in which they are supported and continually enriched by their public grants?" What noble sentiments!

We recommend the whole of Mr. STOREY's remarks to be read by our readers, if they can find them in any public library or private collection. They are well worth the study. Moreover, they will give the enterprising photographer who takes an interest in our National Association a good deal of comfort; for while our government exposes its apathy in this direction our Photographers' Association of America is, in an humble way, doing much more for the growth than its government. But every year is driving more and more home the nail which is to hold us fast to refinement and culture in the art direction.

Another effort made in a quiet way should not be overlooked. We refer to the exhibition of the Photographic Society of Philadelphia, held in this city on March 7th, 1882, when to a large audience examples of photographic art were projected upon a screen by means of an optical lantern. That display elicited a great deal of applause and excited much interest in the art culture of photography.

Mr. ROBINSON's beautiful studies which appeared in a recent number of the *Philadelphia Photographer*, are bound to excite work in a higher direction than has been attempted by landscape photographers heretofore. The introduction of the emulsion plate, with the ability to expose quickly, now enables the photographer to introduce properly posed figures into his landscapes with a great deal of effect. In this direction the aspirant to greater art researches should work with all diligence and talent.

On page 222 of the August issue of the *Philadelphia Photographer*, our esteemed contemporary, Mr. H. BADEN

RICHARD, describes two days' outing with Mr. Robinson and his camera, which is, aside from the instruction it gives, most delightful reading. We commend it to all who are able to procure it, as well worthy of careful perusal. One of the hints given in this charming description is, that it is Mr. ROBINSON'S habit, when going about from place to place, to sketch in his memorandum book such studies as are obtained from time to time of parties on his way, reserving them for future use when the opportunity occurs to take advantage of them. We have also commented upon this in the *Photographic Times*, for October. We there hinted also that the photographer may, by reading, find a great many suggestions for placing such figures as we have alluded to, especially in the poetry of to-day. The suggestions are without end. One of the most charming series of stereoptican views which we know of were made once by our friend Mr. KILBURN, after reading one of the charming winter poems of Mr. WHITTIER. Carefully selected lines are all that are needed in this direction, and we commend our readers to look up the matter and to study it, and then to experiment. No better plan of practice could be followed.

PHOTOGRAPHIC ACCOMPLISHMENTS.

Firing at random on this score, we only mention a few of the things which have been done in our art, and which would strike the observer most sensibly when reviewing the past year's work. One of the most remarkable things in the photography of to-day is the very extensive and elaborate catalogues, which are used by the dealers in photographic stock. Whether it is a spirit of rivalry, or whether it is a real necessity which causes such catalogues to be issued, we know not; but it looks like a great deal of unnecessary waste. Yet the photographic stock business, like all other trades and traffics, now requires its traveller to be kept upon the road continually; and doubtlessly in due course of time every extensive stock-house will have its pickets posted at every cross-road or business centre, watching its interests, and firing away with a reduction of prices whenever any rival comes along. It is simply marvellous to see what big stocks of goods are carried about by these men, with the

utmost complacency and patience, and the most commendable perseverance. "It is the way business is done" they say, and, of course, "if one does it, the other must." All these things make the buyer more exacting, and more fickle, and add to the cost of his purchases. Perhaps the new "Dealers' Association," which has been recently organized, may be able to counteract this great expense. If the photographer will deny himself some of his privileges, he will be able to purchase his goods at less prices, for certainly the *photographer*, after all, pays for all this extra expense. He must.

Another good thing which dealers are doing for photographers is evidenced in the way in which they support the Photographers' Association of America. This is most commendable in every sense of the word. And yet we are not sure but what a little censure should be laid upon photographers who will allow themselves to be thus supported in efforts which are for their own good, and for which they alone should contribute.

If those who come up year after year and become members of the National Association would promptly pay their dues into the treasury, as little as they are, there would be funds ample to carry on all the necessary business, without calling upon the dealers for anything whatever, and thus the craft would be more independent.

Messrs. A. M. COLLINS, SON & Co., the well-known manufacturers of almost all the card-board used by photographers in the market, entered this year their new warehouse on Arch Street, Philadelphia, which we believe is the largest in the world devoted to a kindred business. It is absolutely surprising what growth has followed the enterprise of these gentlemen, who so continually cater to the artistic tastes and best desires of photographers in their line.

Mr. EDWARD J. MUYBRIDGE during last year surprised the Europeans with his wonder pictures of animals and human beings, taken in various attitudes while in rapid motion.

The new Euryscope lens has created a great deal of surprise and delight among the photographers. It comes from the Voightländer manufactory in Austria, through the well-known American agent, Mr. BENJAMIN FRENCH, of Boston.

The Mosaic's system adopted by the *Philadelphia Photographer* in its embellishments has proven very acceptable, though we must say it was persisted in under considerable discouragement. We share the natural antipathy which one photographer feels about "copying the work of another;" but when it is done with the permission of the artist, we must acknowledge the odium ends. And certainly, the majority will acknowledge that from six to ten examples in posing and lighting, though small, are more acceptable to the readers of a magazine than a single one, and that as many more times good is accomplished than would be if only one were used as heretofore. Last year our selection embraced portraits by home and foreign artists, landscapes by the same, and studies of various kinds, which are well worth examination and following.

The Photographic Society of Philadelphia did another good, and showed their general interest in photography by carrying forth very successfully another excursion this year, during which a great many excellent pictures were made, and from which some valuable lessons were gathered.

One of the things which was *not* accomplished this year was the formation of an "International Photographic Association," as suggested at one or two of the meetings of the Photographers' Association of America. Since the *Chambre de Syndicale*, of Paris, performs the office of an international body, it was thought unnecessary to organize another.

Mr. FRED. E. IVES, of this city, has accomplished most wonderful progress in his system of photo-engraving, examples of which we have taken pains to make familiar to the public. The truthfulness with which Mr. IVES presents a likeness of photographic features in his engravings is simply marvellous, and has never been in any degree equalled by any other method.

Mr. JAMES, of this city, is also entitled to a good deal of credit for his accomplishments in the way of cave photography, having succeeded in making an admirable series of photographs in the celebrated Luray Cave, of Virginia, using the electric light as the source of illumination.

"Never before, in all my experience," said a western stock-dealer to us at the photographic convention, "have I seen so

many photographic books sold as have been sold during the past year. This is one of the most favorable signs of the times," continued our friend, "for, looking at it selfishly, the more books there are sold the more becomes the demand for goods; and yet, you know me well enough [we did] to feel sure that I take a special interest in photographic growth and photographic art, and am always more pleased when I can sell a man a photographic book than I am when I sell him a new lens or a piece of apparatus, for I am sure it will open his mind and help him to make better work. Then, eventually, the thing will come back to me in the way of orders for improved apparatus, and there will be more intelligent work in every direction." All hail! then, to the photo-book publisher.

A good deal of sport, however, has grown out of this "book business." Two of our rival stock-dealers have taken it upon themselves to issue the same works, mostly reprints from the English, in competition, at prices ranging in difference from 50 to 100 and 1 per cent.; so that, when a new book is announced, sometimes it is dangerous for a purchaser to invest, lest the next week he finds the same work offered to him at half the price. Thus he is made to feel very much as we often felt, when in the Orient last year, when we made a purchase at a bazaar, at an offer made by ourselves, and afterwards found we might have obtained it after a little more patience and perseverance at one-third the price paid.

This will cure itself, however, and meanwhile that good old standby, the *Philadelphia Photographer*, approaches its second decade. Yes, indeed. This year will end the nineteenth since its birth, and next year will be its twentieth, at the end of which it will be able to celebrate the anniversary of its silver wedding with the craft. Quietly, too, has WILSON'S *Photographics* won for itself a wonderful demand among the cheap books that were offered, and it overtops them all. Its success has been to us most gratifying, because it was the result of much labor and expense. We are glad to say that the sale continues, the fourth thousand being at this writing in press, and liable to be demanded before next Christmas by employers, who forgot last year to present it to their employés, though we

may say, that *many* did *not* forget. We believe, although it is not modest in us to say it, that no photographic book has ever had such an extensive sale in so short a time.

A new photographic journal has been established in Havana, Cuba, entitled *Boletín Fotográfico*. It continues to come to us full of spirit, life, and progress, and takes a high stand in the art direction. It is the only journal, we believe, issued in the Spanish language. So, now, we have magazines in Spanish, Russian, French, Italian, German, English, and American, not forgetting others in the New York and Chicago languages.

CONUNDRUMS IN PHOTOGRAPHY.

And yet with all this progress in all these matters which encourage and help, there are certain thorns in the flesh which bother us all the time. One of these is the persistence which some photographers exercise in keeping down prices. It seems almost incredible, but we know a place where card pictures can be bought for ten dollars per thousand, or one cent apiece; and stereoscopic pictures, mounted on a good stout card, may be had in quantity for fifteen dollars per thousand, or one and one-half cent each. "How can they do it?" said a friend to us the other day, to whom we stated these facts. We had to acknowledge it was away below any calculation we had ever made as to the cost of producing photographic pictures. We think that the thing will be explained sooner or later, when it will be found that the party who does it fails in making his business a success, and leaves his trustful stock-dealer to pay his own bills.

Another conundrum is, how much silver and gold are consumed in the production of a photograph, and how much does a finished picture of a given size cost. We are asked this question a great many times, and are desirous to answer now in this case, once for all, that we have never made a calculation, and we never intend to possess ourselves of any guilty knowledge in this direction. We do not want to know, for the simple reason that if we did we might say something that would encourage some poor weakling to reduce his prices, and to flatter himself that he was going to make money. We think the most pernicious habit that can be indulged in by any photographer who re-

spects his own dignity, is to rack his brain continually to find out how he may supply his work for a low price to his patrons, while it should be the other way, as far as fairness would permit.

The proof conundrum is another which bothers the photographer very much, and a good deal of effort has been made to adopt some arbitrary rule in this direction. But it seems to be a subject which every photographer must handle for himself, governing himself by the class of patrons which support him. No one can fix a method of conduct for another.

In photographic practice a conundrum comes up all the time as to which developer is the best in the new emulsion plate process. The pyrogallic or the ferrous oxalate? This is another query which cannot be determined arbitrarily. Some manufacturers produce a grade of plate which requires one treatment, and others as certainly require another. The only way is to feel slowly and be governed by what your results are by any given method. Secure the best results by some method and then stick to it. The advocates of the various methods are heard from in the following pages.

EMULSION ECHOES.

A great deal has been written during the past year, and, as a matter of course, on questions pertaining to the explanation of work *a la* emulsion, and certainly no subject is so full of interest as this one is at present.

We have only to refer you to the photographic journals, and the pages which follow in the *Mosaics* this year, for a good deal of useful information on this score.

Dr. VOGEL, in his correspondence in the *Philadelphia Photographer*, throughout the year has given us some most interesting hints, to which reference should be had.

One of the most useful additions to our knowledge in this direction was given by Dr. EDER, who recommends for the prevention of fog the addition of hyposulphite of sodium to the developer. His formula is as follows:

Oxalate of Iron developer,	. . . . .	4 ounces.
Bromide of Potassium solution (one to ten),	. . . . .	15 to 30 drops.
Hypo (1 to 200),	. . . . .	30 drops.

Mr. J. E. BEEBE, the well-known manufacturer of dry plates, in Chicago, on page 178 of the *Philadelphia Photographer* for July, commenting upon this most useful addition to the developer says: "Every claim made by the most enthusiastic worker of the alkali-pyro developer is met by this new assistant; softness, roundness, firmness of deposit, quickness of development, rapidity of exposure, and rapid coating, are included in the list of its virtues. If any of the sceptical users of dry plates will make an experiment of using the oxalate developer with the addition of this powerful accelerator, they will be compelled to admit that the dry plate can give effects that the most exacting wet plate man will be forced to admire."

Mr. JOHN CARBUTT, on page 206 of the same magazine, gives us a very useful hint with reference to the oxalate of potash of commerce, which may be helpful to many who do not succeed with this developer.

Mr. CARBUTT says: "The neutral oxalate of potash sold as such will be generally found slightly alkaline. This should have added to it sufficient oxalic or citric acid (Mr. CARBUTT prefers the latter) to give a decided acid reaction to blue litmus paper."

Then take to make the solution of oxalate of potash as follows:

Neutral Oxalate of Potash,	.	.	.	.	16 ounces.
Clear Water,	.	.	.	.	64 "
Citric Acid,	.	.	.	.	$\frac{1}{2}$ "

When dissolved and at a temperature of 60 degrees, test with a hydrometer; and if the test is over 80 degrees, add a little water, still mixing with the neutral oxalate until the hydrometer stands at 80 grains to the ounce.

We recommend a careful reading of the whole of Mr. CARBUTT's useful article on "Oxalic Development."

Some photographers are now practising stripping of the film for the emulsion plate, in order to preserve the negatives in less space, and to insure less danger of breaking than when upon glass. Following the article alluded to of Mr. CARBUTT's, there is one by Mr. ELLERSLIE WALLACE, Jr., on this subject, to which those interested may refer.

Mr. B. W. KILBURN also contributes an excellent hint,

which should not be overlooked. He says: "I enjoy my experiments with bromide gelatine plates, and I find they give me many advantages which I did not get with the wet plate. I fear that the old bath, which was so long my friend, will see very little of my companionship in the future. But I find out something new every day, and also find myself considerably puzzled sometimes. I always deem it safe, though, if things work wrongly, to stop short and look things over before going on. Sometimes I even sleep over them. Often such a course, with the exercise of gumption, has made what promised to be an absolute failure a perfect success. It is always best to stop and get all the light you can to keep you out of trouble, and not go on carelessly and spoil everything."

That most vexatious phenomenon, frilling, is liable to happen to the most careful gelatine plate worker. It has been combated by many, and yet it will, like blisters in albumen paper, most outrageously appear at unexpected times.

Mr. WARNERKE has recommended a substratum for the plate, which he avers will prevent frilling, whose composition consists of albumen, silicate of sodium, and ammonia. But it is our conviction that neither substrata nor alum in the bath, nor any other thing under the sun will prevent the occurrence of this trouble, if the nature of the plate in the beginning is such as to cause it. We have had a good deal of experience in the past few months in developing plates during the hot weather, and we were very rarely troubled with frilling. Our method was to place the developing tray in a large dish of ice water, and in every way avoid the effects of the heat as much as possible. The occurrence of frilling was exceedingly rare.

Mr. W. CURTIS TAYLOR, of this city, threw a bomb into our camp last April in the shape of a very interesting article on page 119 of the *Philadelphia Photographer* for that month, in which he avers that the care exercised by photographers in using only ruby glass for their developing rooms is entirely unnecessary. Mr. TAYLOR argues his case with a great deal of reason, and his article should be carefully read. His conclusions are that a darker shade of the photographer's yellow glass should be selected, not of canary nor yet very brown; and notwithstanding

the theories on this subject, he says: "The fact is, we are now developing our dry plates under a frame of nine 8 x 10 inch lights, set back about eight feet from a good sized outside window, and admitting light enough for one to read the finest newspaper type on a dark day." Mr. TAYLOR concludes by saying: "The pleasure of working in an agreeable light, and plenty of it, will, we are sure, be appreciated by all your readers, and I urge that, after they have satisfied themselves cautiously that I am right, to save their eyes." Mr. TAYLOR's assertions are confirmed by another one of the contributors to *Mosaics*.

The cry of "wolf," however, concerning gelatine plates, is now about ended. Photographers, as a rule, seldom keep house without them, and always have a stock of them on hand, although not universally adopting them. This is undoubtedly the wisest plan, for there are times still when the wet plate will be far more desirable than the emulsion plate, and *vice versa*.

The quickness with which the emulsion may be used has given rise to a variety of inventions in the direction of shutters for exposure. Many efforts of practical usefulness have been brought into the market by various inventors, so that it is not a hard matter to choose one which shall answer every purpose.

A great bugbear to the gelatine-worker, however, has been intensification. So long as emulsion plate-makers are unable to secure for their patrons for some reason or other which they cannot explain, the quality of plate which shall be everlastingly uniform, so long will photographers who use them frequently find in a dozen plates as much variety as we find in a dozen prints emanating from some careless toner.

We have no accusation to make in this direction. We do not know what may be the cause. It may be less haste; it may be more of conscientiousness that is required; but whatever it is, the fact still remains, and as a consequence, plates are met with more than occasionally, which, although deemed to have been exposed properly, do not develop with sufficient intensity to satisfy the eyes that are accustomed to look at results from wet negatives. Consequently any hints which will help to remedy this evil will be of service. The question, "how do you intensify

•

emulsion plates?" so frequently put to experts at the late Convention in Indianapolis, always met with the answer, "I do not know yet how to intensify gelatine Plates." Dr. EDER, who so often comes to our rescue in this matter, on page 189 of the *Philadelphia Photographer* for June, and on page 220 of the *Philadelphia Photographer* for July, gives us two methods, either of which may be found useful.

Another method, which we have in practice found very useful ourselves, will be found on page 220 of the July number, in which Dr. VOGEL says :

Iron Intensifier.—The following stock solution, which keeps very well, is prepared :

G.—Five parts of good white gelatine dissolved in 50 parts of glacial acetic acid, diluted with 100 parts of water, and filtered.

For use, dissolve—

E.—Four parts of sulphate of iron in 120 parts of water; filter, and add 10 parts of solution *G.*

(This solution keeps for some time.)

S.—Three parts of nitrate of silver in 100 parts of water, to which is added four parts of glacial acetic acid.

(Also keeps well.)

After the plate has been washed thoroughly, it is placed for some minutes in a saturated solution of alum, in order to prevent the risk of frilling the film in the following acid bath. After the alum, the plate is rinsed and placed for about five minutes in a three per cent. glacial acetic acid bath. In the meantime, pour (for a 5 x 8 plate) about 5 c.c.m., of silver solution (*S*) into a glass, and place that and the bottle with the solution *E*, within easy reach. The plate is then removed from the acid bath, rinsed, and the solution *E* at once poured over it, taking care that the plate is well covered; if necessary, aid with the finger. Care must be taken to have an abundance of solution on the plate. The solution is now poured off the plate into the glass containing the solution *S*, and then at once pour back again over the plate. The intensification goes on evenly. If red patches form it becomes necessary to rinse forthwith, and then to pour on a two per cent. solution of cyanide of potassium. But if care is taken nothing of the sort will appear.

2d. Sublimate Intensifier.—This Intensifier Mr. WIGHT uses only in cases of need and for certain purposes. He strengthens first somewhat with the iron-silver intensifier although he can use it also without the latter. Here is the formula :

Four per cent. solution of sublimate and a two per cent. solution of cyanide of potassium.

(Both keep a good while.)

The manipulation is quite simple—after the sublimate has acted thoroughly and the plate has been rinsed well the cyanide solution is poured over it. A warm, brown tone appears at once, and the shades remain quite clear ; when ammonia is used this is seldom the case. Also no danger of turning yellow is to be feared. Of course thorough washing is strictly necessary.

A few days ago Prof. EDER gave me the following new formula for a mercury intensifier, which is very interesting, but whether the negatives produced by it are any more permanent than those by the old method, remains to be seen. Intensify as usual with bichloride of mercury, wash the plate, and pour over it the following solution :

Water,	1000 parts.
Cyanide of Potassium,	5 “
Iodide of Potassium,	2½ “
Bichloride of Mercury,	2½ “

The intensification takes place in three stages :

1st. The negative turns yellow, and is yet pretty soft.

2d. The color becomes gradually coffee or chocolate-brown : after continued action of the intensifier the plate appears very strong, and can be washed at any minute, by which the intensification is stopped.

3d. The negative weakens again slowly without losing any details by which any over-intensification can be modified. I have tested this intensifier and found it excellent.

Circumstances arise where a reliable method of weakening the negative, when it is too strong, is just as desirable as one for intensifying. Mr. PRUMM recommends the following formula and gives it his highest approval :

Sulphate of Copper,	1 part.
Common Salt,	3 parts.
Water,	10 “

When about to be used, dilute with eight to ten times its volume of water; place in the plate after having become sufficiently softened, wash the plate, put it in the fixing soda, and wash well afterwards.

Mr. W. H. RAU, on another page, gives us some valuable hints from his experience in the matter of the intensification of emulsion plates.

Of late the ferrous oxalate developer, which is kept under oil, has come much into favor. The developer is mixed in advance, put in a dipping-bath, and olive or coal oil is poured over the top of it. The plates before being immersed in the developer must be washed five minutes under water, as otherwise slight spots appear owing to the adherence of the oil. Quite recently Mr. SCHAARWACHTER reported the results of his experiments in developing gelatine plates with the oxalate developer. After standing two weeks under oil, the developer had not changed at all, and developed a plate perfectly normal.

A convenient method of printing for the use of amateurs has become quite popular, and is known as the "Prussian blue process." It is described by Dr. VOGEL on page 86 of the March number of the *Philadelphia Photographer*. It is reprinted on another page for the good of the many amateur readers of *Mosaics* in order that they may have it in handy form.

Some good and tender soul has, at the expense of a great deal of labor, published in the *Photographic News* a series of "Twelve Elementary Lessons" on the emulsion process. It is one of the most valuable contributions yet made to emulsion literature and instruction, and we are glad to know it has been reprinted in this country, as one of their capital "Series" of photo-monographs, by the Scovill Manufacturing Company, New York. It may be had of all dealers, and is invaluable.

Perhaps the most extensive experience in the emulsion direction that has ever been undertaken, was that organized by the editor of this work last winter, and successfully carried out during six months' absence in Egypt, Arabia, Palestine, and Southern Europe, with his assistant Mr. W. H. RAU. Both of us have endeavored to give to the readers of the *Philadelphia Photographer* the benefit of our experience, in a series of let-

ters, which, we are told, have proven of a great deal of value to the practical worker. We hope to continue them for some time to come, during 1883.

Plates were prepared in November, in Philadelphia, carried to those tropical climes, and exposed during the months intervening up to June. After being carried on the sea, overland by rail, across and along the desert on camelback, and over the mountains on horseback for nearly 12,000 miles, and then back to America, they were developed during the hot months of July, August, and September, with perfectly satisfactory results.

Mr. T. C. ROCHE, that most modest and unobtrusive and useful photographic genius, has placed a "Tropical" plate upon the market during the past year which has won him fame, and which will permit of the repetition of such jaunts as ours, though we did not use them. The fact is, our own America is sometimes as "Tropical" as any country we have felt.

The Photographers' Association of America held its annual Convention at Indianapolis during August, and it certainly was the photographic event of the year. The attendance upon the Convention and the exhibition were both most encouraging, and gave great evidence of interest and desire upon the part of photographers, which is sure to result in a great deal of good and growth, to learn which makes one from our standpoint feel very contented and happy.

QUESTIONS TO THE CRAFT.

In one of last year's issues of the *Philadelphia Photographer*, we put the following questions to the craft:

1. What has been your experience with emulsion plates? Are you having success with them, and what advantages do you find in their use?
2. What have been your failures with them, what the causes thereof, and what the cure?
3. Do you think they will ever enable you to discard the bath and collodion?
4. Do they place you in the way of producing more artistic work?

5. How do your patrons like the resulting pictures?
6. Are your patrons more appreciative than formerly?
7. What are the prospects for business during the coming year?
8. If you have hints for the good of our co-workers, will you kindly add them?

These queries were met in the kindest manner by many of the craft. Some fifty or sixty answers were received and published in the following numbers of our magazine, and in most cases their authors dealt with each particular part of the subject. A review of their answers was prepared for our July number, page 170, to which the interested will please refer. The experience of all but two with the emulsion plate was reported successful, and the plates were thought to be of great advantage. The failures which were reported then, are now almost entirely overcome by improvements which have been made since and given in the magazines from time to time.

Question three is still responded to carefully, with some little doubt as to whether photographers will be enabled to discard the bath and collodion. And yet, many have already done so. There is a general acknowledgment that more artistic work may be produced with these plates, because the exposure is more rapid; and once an artistic arrangement is made, there is more chance of getting it with a quick exposure than by a slow one. Patrons, as a rule, do not notice the results, except where a more artistic pose is secured. As a rule, the photographic patron grows more and more appreciative every year, and with his increased appreciation the prospects for business grow better. And so the good work goes on.

Much good reading will be found in the answers which these gentlemen make to these questions, if those interested will take the pains to refer.

DEATH.

During the year the following well-known persons have been removed from photographic usefulness by death:

Dr. R. SHELTON MACKENZIE, of Philadelphia, in June. A distinguished lover of art, who wrote the first article in the first

issue of the *Philadelphia Photographer*, January, 1864, and since up to the time of his death was a most ardent admirer of our art.

Dr. JOHN W. DRAPER, in February. One of the first experimentalists in our art, and always an enthusiast; an author of many useful articles in photographic literature, whose interest in photography lived until he died.

MONS. ALPHONSE POITEVIN, March 4th. The almost endless number of discoveries made by this distinguished worker in our art are detailed in the *Philadelphia Photographer*, for June and July, by his old friend MONS. LEON VIDAL, of Paris. No one ever did so much for photographic growth as he.

August 10, 1882, on his way East from the Photographic Convention, at Indianapolis, our esteemed contemporary and friend, JOHN H. FITZGIBBON, suddenly departed this life. His career was one of enthusiasm and usefulness in our art, whose warm friend he was, and his services will be hard to replace.

On September 25th, Dr. D. VAN MONCKHOVEN suddenly departed this life—in his prime. His solar camera; his work on the optics of photography and his many contributions to our knowledge made him one of our most useful men and hard to replace.

With the devotion of true men, the world's photographers are determined not to let our art die, so to speak, and are making the effort now to erect monuments over the graves of DAGUERRE, NIEPCE, POITEVIN, and FITZGIBBON.

Would that sufficient funds might be collected to construct them in the most unyielding and time-defying Egyptian granite; for they all lived lives of honor and usefulness, and their work will never cease. Their memories should be perpetuated.

(Written for Photographic Mosaics.)

ON INTENSIFYING BROMO-GELATINE NEGATIVES.

BY WM. H. RAU.

GELATINE dry plates having come into such general use among professional and amateur photographers, the methods and formulas given below may serve many who find on fixing their plates that they are too thin to make good prints, and consequently need intensifying. This want of density in the negatives in many cases is the fault of the emulsion, the writer having lately developed some plates made by a prominent manufacturer which developed to a certain point and no further. Hypo was added to the developer (ferrous oxalate), but no more density was obtained; pyro development was used with no better result; it was evident that the emulsion was at fault, as the plates were not dense enough to make good prints. Again, over-exposure will produce weak, flat images, which need intensifying. Sometimes the image appears strong by ruby light, yet fixes out thin. At all events, intensification after fixing must be resorted to. The reverse is occasionally the case when the image is too dense and needs reduction. The difficulty with gelatine is that no one knows absolutely when the hypo is thoroughly eliminated, so the operator is liable with any of the known methods to ruin his negatives. In using silver the presence of hypo is known at once, but with mercury it may not show its presence for many months. The writer having made the journey through Egypt, Arabia, Palestine, and Syria with Mr. EDWARD L. WILSON, and having exposed a large number of gelatine dry plates, all of which, with the exception of a few developed on the Nile, were brought back and developed at home, found some which needed intensification, and a few that would be better with less density. A number of the most highly recommended formulas published in American and foreign journals were used with varying results. Each of the different methods has strong advocates in its favor, so I will give my experience with a number of them, and explain why one was better in my hands than another. Negatives

of no value were experimented with to test results before using on valuable negatives. I first tried a formula given in an English journal: immerse the plate after well washing in a ten per cent. solution of bromide of copper; the plate will soon whiten like mercury, wash well, then place in a dish of ferrous oxalate developer. The image instead of getting stronger at once began thinning, in fact it finally almost faded entirely away. Another plate was dipped in the copper solution and strengthened with silver and iron developer. Although the negative became very dense, at the same time it stained all over its entire surface to a yellowish brown. The following were next used. Make these solutions as below:

A.—Gelatine,	. . . . .	124 grains.
Acetic Acid, No. 8,	. . . . .	3 ounces.
Water,	. . . . .	5 ounces.
B.—Protosulphate of Iron,	. . . . .	184 grains.
Water,	. . . . .	14 ounces.
C.—Nitrate of Silver,	. . . . .	62 grains.
Acetic Acid,	. . . . .	4 drachms.
Water,	. . . . .	1 ounce.

First pour over the plate sufficient A and B solutions, in the proportion of one of A to eight of B; soak half a minute, then return to the developing cup, to which one to two drachms of the C solution are added and again poured on. The image will strengthen slowly but steadily, and on reaching density enough must be well washed and fixed in weak hypo, and again washed. Before using the above the plate had better be soaked a minute in a sherry colored solution of iodine in water. Make stock solution, iodine $\frac{1}{2}$ grain, iodide of potassium 1 grain, water 1 ounce. Of this use a few drops to the ounce of water. Wash very well before using the intensifying solutions. Move during the operations to avoid stains or unevenness from bubbles. The iron and gelatine solutions will keep well, and are better a week old than fresh. The objections to the above are the crawling of the solutions, especially on the edges, and the liability to staining unless very well and thoroughly washed. The use of a dish to develop in will avoid crawling, but a great waste of solution takes place. The following was next tried: Dissolve 64 grains of gelatine in

glacial acetic acid 2 ounces, water 14 ounces; to this add iron (powdered) 70 grains, citric acid 30 grains. This solution will be a rich golden color when a few days old. Then make solution of water 1 ounce, silver 10 grains, citric acid 10 grains. For use pour iron solution enough over plate, return to the cup, and add a few drops of silver solution. The results are about the same as by the formula above, and the formula is less complicated.

I next turned to Dr. Eder's uranium formula, which is one that was published in 1865 for use with collodion plates, and it is claimed to be equally valuable for gelatine. The negative after fixing is well washed and the following solution poured over it as it is soaked in a dish: nitrate of uranium 15 grains, ferricyanide of potassium 15 grains, water $3\frac{1}{2}$ ounces. I soaked a negative in this and it seemed to bite at once, turning at first brown then a rich scarlet color. The longer it soaked the more density it gained, and on drying was of a rich brown color. I then soaked in it a plate which had a very faint image, an instantaneous exposure, and it gained density enough to make a good print. I was highly elated, but tried again several more plates, all with good results. I thought I had best stop here and go no further, as this seemed so simple, rapid, and beautiful. Then, again, Barlow claims that plates thus intensified are very permanent, more so than when mercury has been used. I now tried some of our negatives of Arabia, and the first three came up smiling; the fourth plate began all right, but soon began to cover and clog in the shadows and run into the whites, and to assume very much the effect of a wet plate that has been exposed to white light before the developer is washed off. I tried pouring a one per cent. solution of nitrate of uranium for a minute, then adding a few drops of a two per cent. solution of ferricyanide of potassium and again flooding the plate with the mixed solutions; the first plate acted the same, but the next came up all right; but I was by this time convinced that I could not handle it with entire success. I might bring through many all right, but at the same time lose many that it would be impossible to replace. I finally was obliged to come to mercury and its various assistants. The following was published (I think) by Dr. Eder. Make a solution of iodide of potassium 12 grains, in

water two ounces; then bichloride of mercury 12 grains, in water 2 ounces; finally, purified cyanide of potassium 24 grains, in 4 ounces of water. First pour the mercury solution into the iodide of potassium, then add the cyanide. The negative immediately on immersion turns black; after blackening evenly all over it began losing again; so this can not be recommended at all. Another formula says, immerse the plate in mercury 20 grains, chloride of ammonium 20 grains, water 1 ounce; let remain in this until gray, then immerse in a weak solution of ammonia in water, say 15 drops of ammonia to the ounce. The plates turned yellow and would not blacken for me at all; the resulting color was very unsatisfactory and objectionable. Edward's formula, as below, was very satisfactory, as its action is very rapid and a great amount of density is gained by it. Make a saturated solution of mercury 10 ounces, then dissolve 10 drachms of iodide of potassium in 10 ounces of water, and pour into the mercury solution until a slight precipitate remains undissolved; then add one ounce of hyposulphite of sodium in crystals, and stir until dissolved. Dr. Eder says this method is very convenient, owing to the fact that the hypo left in the film need not be entirely eliminated, but it is best to remove that which remains on the surface as much as possible. Negatives intensified by this formula are not permanent, but after exposure to light become stronger or fade entirely away; it is always better, however, that the negative should get lighter than darker. I found I was obliged to use this method with plates that were very thin, as by no other method could sufficient density be obtained. For ordinary use the above solution can be diluted one-half or more, and the plate must be watched well until strong enough; in case of too much intensity with it, a weak solution of hypo will reduce it again. Of course, I tried the plain mercury and followed with ammonia, with very satisfactory results, but found the ammonia was apt to fill the soft gelatine in the rapid plates during warm weather. The method by which the best and most pleasing results were obtained was by the use of cyanide of silver in place of ammonia after the mercury. The plate was first bleached in a solution of water 10 ounces, mercury 100 grains, chloride of ammonium 100

grains; well washed and placed in a dish of the following solution: dissolve cyanide of potassium (purified) 1 ounce in 16 ounces of water, then make a solution of nitrate of silver in water, say 25 grains strong, which is then poured into the cyanide, stirring constantly until a small amount of precipitate remains undissolved. When the plate is placed in this solution it should be kept in motion, as the action of the silver is very rapid; otherwise unevenness may result. If the mercury has been carried too far, making the negative too strong in the cyanide, it can be left in the cyanide, which will react and begin reducing the density. The resulting color with the above is all that can be desired, generally a rich red-brown. This last method gave so much satisfaction and seemed so easy to control, that many valuable negatives have gone through it, and were made the better by its use. The amount of density obtained seemed to depend on the length of time the plate remained in the mercury or the strength of the cyanide of silver solution. Very rapid plates perhaps would require weaker cyanide solution.

The plates on which the above methods were used were mostly Carbutt's slow A, and ordinary rapid B. With all the Beebe plates taken to Egypt plenty of density could be obtained; in fact, some were too dense and needed reduction. I first used mercury and iodide of potassium, washed well, then immersed in a weak solution of hypo; results satisfactory, but not so easily controlled, requiring careful judgment. I found a 15 grain to the ounce solution of ferricyanide of potassium would reduce the strength very rapidly, but could not know how the film would last after its use. The simplest and most successful plan is to immerse the plate in a solution of water 6 ounces, perchloride of iron 60 grains, until nearly the right density; wash well and soak a few minutes in weak hypo, after which well wash. Cyanide of potassium alone will reduce a strong negative, but it attacks the fine detail in the shadows. The English journals were full of articles highly praising the results obtained by the use of Holme's ozone bleach, and Condry's fluid, neither of which could be obtained in Philadelphia.

(Written for Photographic Mosaics.)

THE YELLOW PRECIPITATE FROM THE FERROUS OXALATE DEVELOPER.

BY H. D. GARRISON, M.D.

THE directions for ferrous oxalate development sent out by some manufacturers of dry plates are, I believe, susceptible of considerable improvement. I long since noticed that a solution of oxalate of potassium, made by the reaction of one pound of oxalic acid upon one pound of carbonate of potassium, is too weak to hold more than about the quantity of ferrous oxalate which is formed by the addition of one-sixteenth of its volume of a saturated solution of ferrous sulphate. If, however, more than one-sixteenth of the iron solution is added, and the temptation to do so in the case of under-timed plates is often very great, a yellow, sandy deposit of oxalate of iron forms, and so tenaciously adheres to the gelatine film that neither water nor the camel's-hair brush can be relied on to remove it without injury to the negative. I may mention, however, that I have found a plain solution of oxalate of potassium very efficient in removing this deposit from fixed plates; and that by simply increasing the amount of this solution in the developer the deposit can be removed if it has begun to form. As this deposit arises from the inability of the oxalate of potassium solution to retain in solution the amount of oxalate of iron formed, and as the solvent power of this solution increases very rapidly as its strength is augmented, it is evident that the evil may be averted by simply employing a more concentrated solution of oxalate of potassium.

The directions to which I refer are very misleading, from the fact that they lead the reader to infer that he has made a saturated solution of oxalate of potassium, when indeed he has formed only a very weak solution. In a case before me, the author, after directing that one pound of carbonate of potassium and one pound of oxalic acid be mixed in one gallon of water, says: "There will be a small amount of the salt remaining that cannot be dissolved, but which will filter out." Now, the "salt" re-

ferred to is not a salt at all, but simply part of the excess of oxalic acid used in the formula. Indeed, to perfectly neutralize the oxalic acid directed in this formula, 480 grains more of carbonate of potassium must be employed, in which event the "salt" will be seen to disappear. No doubt the finished solution of oxalate of potassium should be slightly acid, but in the formula an excess of over 600 grains of acid to the gallon is directed, which is evidently a mistake. I have thought from some indications observed, although as yet I have not tested the matter carefully, that this great excess of acid, when it finally becomes dissolved, causes the deposit of bright metallic silver in the form of a veil over part or the whole of the plate.

A solution of oxalate of potassium made according to the formula alluded to, will contain about 80 grains of oxalate of potassium to the fluidounce, but some authors recommend a solution of over 100 grains of the salt to the fluidounce; while Dr. Eder recommends a solution of 160 grains to the fluidounce, or exactly twice as strong as that made by the formula.

In conclusion, I may add that the yellow incrustation which forms on developing trays is oxalate of iron, and may be removed by digestion in a concentrated solution of potassium oxalate. Requiring nearly 5,000 parts of water for solution, oxalate of iron is not easily removed by ordinary washing, but fortunately does no harm so long as it adheres to the tray.

(Written for *Photographic Mosaics*.)

PRODUCING ARTISTIC EFFECTS IN PHOTOGRAPHY.

BY W. IRVING ADAMS.



ALMOST every one is familiar with the effects that may be produced on the imagination by looking at a view in nature through a colored glass. It may be a fine sunny day and the scene one possessing a warm and summer-like appearance; but by surveying such a scene through a plate of cold blue glass, everything is seen to be imbued with an icy coldness, and but

for the luxuriance of the foliage the view would be essentially one possessing cold, wintry characteristics.

By supplanting the blue glass with a green one, the scene is a moonlight one, Red glass of various shades convey the idea of July sultriness; orange that of warm sunset; and so forth with other shades of color.

By means of a cheap and very simple system the same effects may be produced in photographs, and innumerable varieties of emotions called up.

Select two unmounted landscapes alike in every respect, and have ready two flat dishes containing water. To one of them add two or three drops of strong red liquid aniline color (easily procured of all dealers), and to the other add an equal quantity of blue aniline. Now immerse a print in each, and in about a minute the albumen and paper will be evenly and beautifully dyed, the one picture presenting a rich, warm, rosy summer glow, the other cold and gray.

It takes so little liquid color to produce these effects that there will be a danger to the beginner of overdoing it. Should this be the case, the tone may be lowered by immersing the print in diluted acid.

The most striking effects are obtained by green dye. It was in this way that some famous moonlight views in Venice were produced. The moon itself, as well as the white silvery ripple on the water, must be formed after the picture is finished and dried, by a brush or pen dipped in an ink composed of acetic acid preferably thickened with gum. By every touch of such ink the color of the dye is discharged, and the moon stands in all of its silvery whiteness upon a dark sky.

Effects of the nature indicated are so easily produced that those who are desirous of stepping aside a little out of the beaten track of photography would do well to make a trial of it.

Cases containing a dozen bottles of colors, all of them suitable for such purpose, are now easily procurable. Although such colors were intended for other purposes, they are none the less admirably adapted to the one in question.

Our amateur talent will find this a very entertaining diversion.

(Written for Photographic Mosaics.)

THE SILVER PRINTING BATH.

BY W. H. SHERMAN.



AMONG the improvements that have been made in photographic methods, and among the things that have been set aside for something else, whether better or worse, the silver printing bath still remains, in defiance of carbon tissue and the imperishable platinum. Judging from the discussion that arose during the recent convention in relation to it, it appears to be sometimes a little troublesome. Like its brother, the negative bath, it is occasionally up to its little eccentricities, which vex its employer and induce him to try some of the various prescriptions that have been recommended for its alleged ailments. It may be useful to those who are bothered by the recurrence of these unexpected freaks, to learn how it may be used year in and year out—the same yesterday, to-day, and to-morrow—without doctor, medicine, or sexton. What I have now to offer is nothing new or startling. I gave it in substance in a paper which I read at Buffalo nine years ago, which will be remembered, by those who were so unfortunate as to hear it, for its tediousness (it should have been read by title); but it was nevertheless published. Having been in constant use in my printing-room for ten years or more, the method may be recommended as reasonably reliable.

This is how it is done. The silver being dissolved in clean water (no matter if it is a little hard), at the strength of about 60 grains to the ounce, a little carbonate or bicarbonate of sodium—it is entirely immaterial which—is added until a slight precipitate forms that will not dissolve on shaking. Then add one drop of strong ammonia for each ounce of silver crystals used. Shake and set aside to settle clear. A good plan is to prepare it over night. I shall take it for granted that the silvering is conducted in a room set apart exclusively for this purpose, and provided with requisite appliances, such as filter, filter-stand, wide-mouth bottle, etc., and that it is well ventilated. The bath solution should be of such quantity that the amount of silver

taken from it for the day's printing will not reduce the strength of the whole materially. With a half-gallon solution at 60 grains, the strength would be reduced only about two grains per ounce by silvering ten sheets, while a pint solution of same strength would be reduced nearly ten grains. In the former case twenty-five sheets might be silvered safely, provided the solution be frequently stirred so as to prevent the surface becoming exhausted. A material point is not to let the top portion of the bath become weakened so as to dissolve albumen from the paper. This having been attended to, all that is required further is to give it plenty of fresh air every day after its work is over. And this is accomplished by letting it stand uncovered in the silvering pan, the door of the room being closed to keep out dust. In this way the organic matter absorbed from the paper is oxidized, and is ready to be filtered out the next morning. For this operation the filter and wide-mouth bottle always stand ready at hand, and this is the first step preparatory to each day's printing while the bath lasts. This is poured into the filter and the pan rinsed. It is then tested for strength by the ordinary hydrometer, which is sufficiently accurate for all practical purposes where no other salts are used in the bath but those named. Usually it is found to be stronger than on the previous day, in which case water is added in sufficient quantity to bring it down to the required strength. When it becomes reduced in quantity so as to require replenishing, a new solution is prepared as at first and in the same bottle, which has been set aside with the sediment (carbonate of silver) which remained when the first clear bath was poured off. Another bottle is also kept to hold the rinsing water for the silvering pan, which water is used over and over until the new bath is made, when it is filtered and taken to dissolve the silver in.

This method, when followed systematically, seems to be as near an approximation to perfect uniformity in the management of the printing bath as it is possible to make. It does away with all fussing with kaolin, camphor, alcohol, or what not, and is always in readiness for work, at one time as well as another. I do not believe in the use of other nitrates, such as nitrate of sodium, magnesium, or ammonium, for the reason that as far as

I can find in practice they are not needed. The silver should be strong enough to coagulate the albumen without fail. As the best brands of paper are salted at present, about 60 grains to the ounce give the best results. When such is the fact there is no economy in tampering with weak solutions. Have your bath strong enough and enough of it, so that your biggest batch of printing will not reduce it to unsafe weakness. Highly glazed paper requires long silvering. If the albumen is pure and is coagulated clean through there is little or no danger of blisters. A heavy coat of albumen filters the silver out of the surface stratum of the bath, so that at first little but water reaches the substratum of albumen next the paper. The certain consequence will be those immense blisters so well known if the paper is removed too soon. The proof of this is, *paper silvered from the back never blisters*, so far as I am aware.

With this remark I close the present confabulation. If these hints from an old workshop should happen to be of any service to some of the younger brother craftsmen, it is well that they be jotted down.

(Written for *Photographic Mosaics*.)

SOMETHING PRACTICAL.

BY M. L. DAGGETT.

SUCH is the call of the editor, and though hard at times to cover new points on ground so well worked over, I will try to furnish an item answering the call, and useful enough to some in saving what might otherwise be deemed worthless stock. The saying of "What can't be cured must be endured," though good enough logic in itself, is applicable to but few cases after all; and before putting into practice the "grin and bear it" theory, we should be sure the "grin" cannot be changed from a doleful to gleeful one by a little care and thought.

A case of the kind commended itself to me a short time ago

in dealing with those ever recurring and hated *blisters*. I do not mean the little fellows on the print with "millions in it," but those aggravating overgrown ones that, like the so-called "bloated capitalist," puff themselves up to the entire disregard of the feelings of the "laboring classes," who may find it hard to keep the temper sweet when a valuable print in a big day's work is seen saddled with one of these monsters.

Until recently I had been in the habit of throwing such away as unworthy further labor, for in drying the chances were the albumen film would be broken and the print thereby ruined.

I have a 17 x 21 print (by Naya, of Venice) which I framed without mounting, owing to the discovery of one of these pests nearly in its centre, and feared even the most careful work might ruin it if mounted.

But even such cases have proved not to be beyond cure after all, though we may not be able to prevent them. I have never seen published any method of dealing with such cases, but I hit upon a simple treatment which may be as new to some others as to me.

Heat the point of a "dropping tube" and draw down to as fine a needle-point as possible and yet have a hole through it, fill this with a very thin *filtered* gum water. Lay your print *face down* on the mounting-glass and carefully inserting your sharp point near the *edge* of the blister give it a "hypodermic injection." Do not burst but still fill as full as possible, that the gum water may go to the outer edges, then, withdrawing your tube, carefully press it all out again through the opening your tube has made; now mount and dry, and if you have done a neat surgical job, you will be unable to detect its locality.

This matter tends incidentally to disprove the theory of blisters containing "soluble albumen" or any other *liquid*, as you will find it to act very differently in this case (when you know you have injected a liquid and are trying to press it out) from the quick collapse following ordinary breakage.

(Written for Photographic Mosaics.)

NEGATIVE RETOUCHING.

BY WM. McLAUGHLIN.

THE above subject is one upon which a little "light" is occasionally shed by some of our more interested negative retouchers, but usually to a limited extent. It has been my intention for some time past to make a few remarks bearing on the subject, but have been deterred by my inability to say anything that I thought new, although some may be able to find a point or two of interest from what I now propose to say.

I have concluded to speak a few words to professional negative retouchers with respect to their *modus operandi*. A great many retouchers use a cloth for excluding all side or back light, which is usually held in place by an U-shaped wire, and which completely covers up the person from view; this is all very good for the purpose, but I wish to call the attention of those who use it to the fact that it is injurious to the eyes, inasmuch as it heats a person if they retouch constantly, and those of you who retouch in warm weather certainly know that the eyes are more troublesome than in cold weather. The tax upon the eyes consequent upon constant employment is sufficient to affect them without adding heat in the slightest form. Where one is troubled with side or back light I should advise a folding screen, which answers admirably.

Another point I have observed with a great many is, that they exclude all light which may pass through a negative excepting that admitted through a small aperture about as large as a silver dollar. This, I think, is a wrong idea, as it brings the eyes in contact with a strong light concentrated in a very small space, and will in my opinion affect the eyes much quicker than where the light is diffused through the negative, producing a mellowness, which is more agreeable. The former method is similar to a person standing on a steam railroad station on a very dark night, facing the headlight of an approaching train.

In my retouching table I have an opening the size of the exposure on an imperial negative or to be more plain, half the

size of a 10x8 plate, using a small piece of cloth upon which to rest my hand and protect the negative from becoming oily; with this plan and a good light I seldom experience any difficulty.

Retouchers should not approach too closely to a negative, as it is impossible to work as well as when sitting off ten or twelve inches, and it is possible to work faster where one sits at the proper distance. I have observed retouchers sitting, or I may say properly lying, within five inches of the negative, and how they ever *finished* their negatives is beyond my comprehension. As I said before, when retouching a two inch head I frequently sit at a distance of ten or twelve inches; and when working on a five or six inch head I am off at arms' length, as far as I possibly can get; and the sooner retouchers observe this the better it will be for them and their work.

I do not advocate too strong a light, nor *vice versa*, but one which will permit a person to sit erect and also see all that is necessary in a negative.

The fashion of some retouchers of using a mirror as a reflector for illuminating the negatives I also disapprove, as it gives a "glary" light, and becomes very hard to work with in consequence. I find a piece of white card-board and ground-glass the best accessories, excepting where there is a great amount of sunlight, when I substitute a sensitized plate instead of ground-glass, and diffuse the light on the reflector by placing tissue paper between it and the sun.

I think a negative should be kept stationary when being retouched, instead of being placed at various angles, as a retoucher should have but one view of a negative during retouching, and not a dozen, as every view makes the face look different from the other; and if one follows the forms with the pencil, it becomes unnecessary to move the negative in the least. I never saw a crayon artist place his crayon on its side, or at a forty-five degree angle, or in any other than an upright position, slightly inclined from him; and when he works, usually follows the form of the face and figure with the crayon pencil. And why not do the same in retouching a negative?

There should be as little retouching on a negative as is consistent with good work, and to follow this plan, the first thing

to observe is your negative; take a good look at it, and fully decide, before putting a stroke of the pencil on, what is necessary to be done; then proceed to retouch, after having prepared your surface as you are accustomed.

It is essential that particular notice should be taken of the way the subject is lighted, as it is a very easy matter to destroy some delicate half-tone by a stroke or two of the pencil, and possibly take away some marked characteristic of the person, and thereby impair the likeness. And how often do we see this same thing done by prominent photographers, especially in the cases of public characters.

It is necessary, in order to *finish* work, to retouch negatives to a greater or less degree, as the case may require; but it is *not* necessary to put a lead surface on every negative, which certainly exposes the retoucher to the risk of changing the *likeness*, the most important point to be kept.

It is very often the case that an under-timed negative is ordered, and then the ability of a retoucher is tested, in order to produce something that will be presentable, from a photographic standpoint; and in order to attain such results, it is necessary to resort to a great many devices, such as ground-glass substitute, color of different shades, and crayon, to get the negative to such a stage as will assure you that it will print well with careful handling. Sometimes a little too much top light causes heavy shadows, which it is necessary to lighten with pencil and color; and in cases of very much under-timed negatives, there should be little if any work done on the lights, and the principal part put on the shadows and other parts requiring it.

In order to prepare my surfaces I put on a solution of turpentine and rosin, mixed in suitable proportions to give a "tooth" to the pencil, and then rub with a piece of cotton, to prevent the same from becoming sticky; but do not rub it all off, which can be very easily done.

The proper way to prepare the negative will soon be discovered with a few trials, and better understood than I can explain. Your negative prepared, you are then ready to commence, but what will you do? First, take a good look at your negative, and see if there is harmony pervading it entire; if not, proceed

to produce it. I will here say, I suppose a person to understand a negative; lighten any heavy shadows, or *vice versa*, as the case requires, but use great care in what you are doing, as now you are on a vital part of the work, and a very little work on the wrong spot might be fatal.

Occasionally we see negatives with the eye on the shadow side of the face having a sunken appearance, due to bad lighting. This should be remedied by putting prussian blue on the back of the negative, after doing all that is possible with the pencil on the film side. Great care should be used in putting on the blue, and avoid covering the "sight," as it will give the eye a very unnatural appearance—a decided blue.

In correcting defects similar to the foregoing, it is essential that the retoucher should understand the anatomy of the face thoroughly, as there are very many little points which it is impossible to thoroughly explain on paper, which an unskilful workman would overlook, and would thereby imperil the likeness.

In all faces there are a greater or less number of half-tones which it is the pride of *photographers* to preserve; but a certain class of retouchers, apparently, take pride in taking out all such forms, giving the face the appearance of an ordinary football. At this moment I can recall two instances, wherein the negatives of prominent tragedians were retouched to such an extent as to make them look fifteen years younger than they were; and every line or indication of a half-tone had disappeared, leaving a puffy-looking picture, which was, through force of habit, called a photograph. It is this quality of work which has brought negative retouching into disrepute with so many photographers, but the remedy is with the photographer.

Taking the forehead to commence with, I direct attention to what we find there. The inner man, to a certain extent, is depicted there in all his force of character; the quick or mild tempered, the studious or idle, are brought out before the eye of the student of character. And I might here say, that in that studying of characters is where the success of some retouchers originated.

I find myself constantly studying faces as I pass along the

street, through force of habit, and it has been of great service to me in my work. There is not a line in the forehead that should not remain, but in a subdued way, as to leave them as they appear would be to give them unusual prominence. We also find a number of beautiful half-tones, one over each eyebrow extending toward the nose and meeting over the last-named organ, and also extending in the opposite way until it meets the temple. These are to be particularly cared for, as a wonderful change can be wrought in the appearance of the face by obliterating them. Then the nose comes in for a share of attention, to which it is justly entitled.

It is a very easy matter to ruin the nose in a three-quarter view, unless great care is used. This will apply to any view, but especially to three-quarter and full-face views, with either Rembrandt or broad lighting. The flesh of different persons varies, as regards photographing, about as much as do their features, and consequently retouchers are often put on their mettle in retouching negatives of persons greatly sun-burned, or *vice versa*. And I may mention here that observation of faces by retouchers will here prove of great value, as the light on faces varies so greatly that the high-lights are often made so broad and end so abruptly as to give to the face a "blocky" appearance. This, in some cases, is caused by a glossiness of the skin, more observable in the case of dark-complexioned persons, and should always be greatly modified. In a full or three-quarter view it will be observed, in a properly lighted negative, that the high-light on the nose commences very near the upper portion thereof, and about on a line (imaginary) with the pupils of the eyes, then extends down gradually until near the end, where it becomes nearly extinct, and finally ends in a moderately strong light. The next place where this high-light is made strong is about three-quarters of the distance from the point of the nose; but there are exceptions to this rule, as there are to every other. Care should be used in strengthening this light so as not to give the nose the appearance of having been planed off, or of having been cut in two lengthwise by a sharp line. All strokes of the pencil should be blended, as anything too sharp is harsh to the eye, and very unartistic. Be careful about

the nostril, as that wants as much care as any other part, especially in full views, as it is very easy to give the nose the appearance of extending away over near the cheek, on the shadow side, unless care is taken.

Having pointed out some things that may serve some one, I will now proceed to the eye. This organ is sometimes spoken of as the mirror of man's soul, and it certainly does reflect a great deal of the characters of man and animals. An important point in the eye is the illumination, which is the life thereof; and to this too much attention cannot be bestowed, as a very great part of the picture depends for expression on the eye. And this attention will be lacking where one is not acquainted with anatomy (facial), and the effect of light thereon. How often do we see the "catch-light" of the eye placed on the shadow side in cases where it is necessary to illuminate the eye in retouching. Such a case came under my observation a few days ago.

The eyelid (upper) in very fleshy persons, or babies, is sometimes quite indistinct, owing to their being so stout. This should remain nearly as it is, as it gives the eye an unnatural appearance of prominence to strengthen it in retouching, and the same will apply to persons who are old and thin, with eyes sunken. It is only necessary, in the previous case, to modify the heavy shadow.

There is a form over the eye which demands a great deal of attention, owing to its close proximity to the organ of vision, which controls the expression of the face to a considerable extent. In cases of persons frowning it can be removed by carefully working up this form, and the appearance of hollowness removed also. The catch-light should not be a dot, but of uneven form; sometimes being near the shape of a triangle, and then again being shaped like a square, but never a dot, as is often seen in some prints.

The mouth and chin come next, and a great deal can be said about both, as they play an important part in the make-up of the face. In a broad-lighted picture the upper lip, on the shadow side, can be made to extend into the cheek by simply ignoring a very delicate half-tone which will be found there.

The shadow in the corner of the mouth should be modelled carefully, and any sign of a dimple in the chin should be carefully kept, instead of being removed, as is often the case—giving the chin a similarity to a peculiarly shaped pumpkin, sometimes used for bailing water, and called a calabash.

In conclusion, I would recommend the study of light and shade from a cast, and if that cannot be done, then from living models, as we find them everywhere. To become an adept at retouching requires deep study and an interest in your work.

(Written for Photographic Mosaics.)

A METHOD OF MOUNTING PHOTOGRAPHS

*ON THIN CARDBOARD OR PAPER, SO THAT THEY WILL
NOT WARP OR COCKLE.*

BY E. BIERSTADT.

BEFORE trimming the pictures, brush the backs with ordinary starch paste, and lay them aside to dry; then trim them, and, if you wish to mount on cardboard, dampen the surface with a sponge, and lay the starched side of the photograph on a damp pad of blotting paper or cloth, until it is limp; then place it in position on the card—which must be damp, but not wet—then pass it between rollers, or press it on a copper-plate press, and the picture will stick. If they are to be mounted on paper, instead of dampening with a sponge, dip every third or fourth sheet in a pile of any number, let them remain for several hours, or until all the sheets are equally damp, then apply the photograph, with the back dampened, as described above, and press as before. Instead of drying in the air, lay them between thick pasteboard, and dry them by absorption under pressure, changing them every two or three hours until dry. Then roll them again to smooth the surface, and they will never warp, even if laid in the hot sun.

All this may appear a little complicated, but in large photographs, or large numbers of any size, it will pay.

(Written for Photographic Mosaics.)

SCIENCE MISAPPLIED.

BY ELLERSLIE WALLACE, JR.

I HAVE frequently noticed that among those who have applied to me for advice in their early photographic efforts, there were some who, while splendidly educated in general chemistry, seemed quite unable to apply their knowledge to the requirements of the dark-room; indeed, their knowledge, so far from helping them, was a positive drawback. And why was this? Because, in spite of their being familiar with photographic chemicals, as used in the laboratory of the experimental chemist, they seemed not to make allowance for the fact, that although the manipulations are apparently carried on in the dark-room in a very rough manner, in reality it is not so, and, indeed, that many a chemical truth has been discovered only by the closest observation of the behavior of large quantities of solutions when used in the absolutely methodical manner demanded at the hands of a good operator.

I have also noticed that among those who are regular contributors to photographic literature, some seem to carry with them constantly such ideas as are useless to the practical man in the dark-room, whatever they may be to the scientific amateur; and, indeed, in some cases such writers have given advice of a very questionable character. For instance, a recent number of an English journal contains an article from the pen of a Fellow of a Chemical Society, advising photographers to send their old baths to the refiners, or, if they must work them over themselves, to do so only by throwing them down with salt, reducing the chloride, and redissolving the metal. Excellent advice, undoubtedly, for those who do not object to the refiners' charges, or who have ready access to such a person. But this was not all. The writer went on in the course of his article to condemn a method of renovating the bath simply on the score of expense, which I should unhesitatingly recommend for just the opposite reason in the first place, and the admirable working qualities of

the solution, after being so treated, in the second. I allude to the precipitation method with bicarbonate of soda, full details for its carrying out being given on page 152 of the May number of the *Philadelphia Photographer* of last year.

The objections raised by the writer above mentioned are these: First, inasmuch as iodide of ammonium is used in nearly all collodions, that an old bath will contain a considerable quantity of nitrate of ammonium, arising from the chemical changes taking place when the plates are dipped, and that carbonate of silver being soluble in nitrate of ammonium, a large amount will remain behind after the soda is added, and pass away to waste in the wash-waters. Again, that it is impossible to precipitate silver thoroughly with bicarbonate of sodium under any circumstances; and, finally, that the carbonate of silver, when precipitated, is soluble in water, so that the total loss would amount to from ten to twenty per cent. of silver, as might be proved by adding a soluble chloride to the first wash-waters, when the presence of silver will be seen by the precipitate of chloride of silver which instantly forms. Formidable objections, indeed, and true, too, in a strictly chemical sense, *except as to the quantity*. Here is the error. After many trials of this process, I do not hesitate to say that this is a very great exaggeration, and any one can easily satisfy himself that this is so by precipitating a small quantity of a worn-out bath with soda, and testing for silver afterwards with a solution of common salt. Although there is some chloride of silver formed, it is in such small amount that it would never pay for the trouble of collecting. The test for nitrate of silver with a soluble chloride is famed for its extreme delicacy, and will reveal the presence of very minute traces of either of the reagents, and I can well understand that an inexperienced person might imagine a large quantity of the precious metal to be present when making such a test.

So then, although these objections made to the precipitation method cannot be denied as chemical truths, still I feel that the writer of the article mentioned has not made the proper use of his scientific attainments in leading others to believe that the process is an extravagant and wasteful one. The bath, when renovated in this way, is a *new bath*, working just as new solu-

tions do, and lasting just as long before another renovation becomes necessary, and this can not be said of any solution that has been "boiled down" in the ordinary way.

(Continued from Mosaics, 1881.)

THINGS I DON'T LIKE TO SEE.

BY J. H. HALLENBECK.

CHAPTER II.

PAPER floated one minute, when you intend to float two minutes. Use a sand-glass.

Rubbing dust off the paper (before floating) with the fingers. Use a camel's-hair blender.

Cutting or trimming the prints with an uneven glass form. Use the Robinson guides.

Tearing the corners of the prints off in trimming. Use the Robinson trimmer.

Cutting the paper the exact size before printing, and not allowing for the expansion of the paper when it has been wet. Have the guides made one-sixteenth inch smaller than the print is to be when finished, and cut the paper the proper way, as it expands more when cut wrong.

Using old newspapers for blotters for the prints, also papers full of hypo soda (the soda is used to bleach these papers). Use white blotting paper free from soda.

Using starch made in rusty pots. Use copper kettles, and keep them bright and clean.

Using brushes whose bristles keep coming out at the wrong time. Soak the new brush in water over-night, and always wash it clean after using, and keep it in a clean place.

Mounting the prints at haphazard, more margin showing on one side than on the other. Have patience, and take all the time requisite for doing a neat job.

Having bubbles of air under the print when it is laid on the mount. Drop one corner down on the mount, and then gradu-

ally lower the balance of the print; then the paper, as it drops, drives all the air before it.

Rubbing the print down with the hand, or licking it down with the tongue. Use clean blotting paper, or a soft, clean sponge, well dampened.

Letting the paper lay uneven on the silver solution while it is being sensitized. Lift the paper by the corner and let the air out, and breathe on the back of the paper until it lays flat.

The prints come from the hypo red. Use more gold, and don't add gold to the bath when the prints are in; and tone longer. Also, have a lump of muriate of ammonia in the hypo.

Parts of the print toned, and patches not toned—making it look like the measles. Fume longer; use good liquid ammonia; have the fuming box dry (as it collects dampness from the ammonia). Put in hot bricks two or three times a week to dry it out.

Tear-drops on the paper. Use a weaker bath, and don't float so long.

Yellow lines or streaks on the back of the paper. Don't pin the paper on board to dry, but use patent clips on a string, and have paper on the bench to catch any drippings.

The printing frame backs laid cloth-side down on the table while replacing paper, for when replaced they carry in dirt, tacks, and splinters. Turn them over so as to rest on the springs.

Sensitizing, toning, and fixing in the same tray. Have separate dishes for different solutions.

Vignettes lying flat on table or benches while printing. Raise to angle of parallel line with sun.

The paper switched off quick from the silver solution, and allowed to drip on floor. Draw it off steadily; place a dish under a corner to catch drippings.

Sheets covered with spots and streaks and one-half wasted thereby.

Hypo spilled on the floor, and tracked through the rooms.

Printers tear paper into suitable sizes. Cut it with a knife or shears through folds.

Springs loose and frames all a wreck. Use the screw-driver on rainy days.

Negatives laid or thrown around carelessly. Place in bags and arrange in alphabetical or numerical order.

Chloride of gold poured in old, played-out toning bath. If a little salt or soda (bicarb.) added to it does not renew action use a fresh one.

Waste solutions dumped in sink. Precipitate with sulphite of potassium. Give residue to refiner; fifty and more per cent. of silver can be regained.


Employés coming in at nine and ten o'clock and trying to hurry the work off in the late afternoon hours. Two hours of the morning-light is worth more than the last six of the day.

Vignettes having the line of the grader show a sharp and defined line. Raise them up well, or nick the edges to soften while blending.

(Written for *Photographic Mosaics*.)

A WORD FOR DR. VAN MONCKHOVEN'S FERROUS OXALATE DEVELOPER.

BY J. H. SCOTFORD.

 AFTER having used the ferrous oxalate developer with gelatine dry plates for nearly three years, both in the form as originally published by Dr. Van Monckhoven, and as afterwards modified by Dr. Elder, perhaps my experience may be of value to some one.

My own practice has satisfied me that Dr. Van Monckhoven's developer is superior to the formula of Dr. Elder, both in the ease with which it is used, and the quality of the results. And it takes no more time to make it. As the manufacturers of plates give only Dr. Elder's modification of the developer, I herewith give Dr. Van Monckhoven's as I am now using it.

Place upon the stove and boil a tea-kettle full of water.

No. 1.—Boiling Water, about	.	.	.	.	24 ounces.
Sulphate of Iron,	.	.	.	.	6 "
Oxalic Acid,	.	.	.	.	3 "
No. 2.—Boiling Water,	.	.	.	.	24 ounces.
Neutral Oxalate of Potash,	.	.	.	.	8 "

To make the developer—1st. In a small granite-ware or porcelain-lined kettle put the six ounces of iron, and pour about the above amount of boiling water upon it, stirring it with a rod; in about one or two minutes it will be dissolved. Then add the crystals of oxalic acid, and stir for a moment, when the iron will be converted into a yellow precipitate of oxalate of iron, which in two or three minutes, will settle to the bottom of the dish, after which the water should be carefully decanted off, leaving the iron in the bottom of dish; about the same amount of fresh hot water should be added and well stirred, and again allowed to settle and be decanted. This operation should be performed four or five times, or until the acid used is completely washed out of the iron.

2d. In the meantime the oxalate of potash is to be dissolved in about twenty-four ounces of boiling water, and after the last washing has been decanted from the iron, the potash solution is turned upon it, and it is placed over the stove and stirred for about five minutes, when the iron will all be taken up by the potash. When cooled to 85° Fah., it is ready to use. This makes a saturated solution of ferrous oxalate, and if used of this strength will develop a fully exposed plate in about ten seconds. In practice this is too energetic to permit a proper examination of the work, therefore I divide the solution into two parts, one of which I weaken with water until it will consume one to three minutes in the development. The advantages of this developer are that, by the simple addition of water, you can adapt it equally to the most delicate draperies and lightings, or hardness and strength, that are attainable by the old wet process. An under-exposed negative can nearly always be brought up to good printing qualities with the strongest developer, and it is possible to make exposures of an eighth of a second or less in the studio, with good results, by its use.

The keeping qualities of the developer are most excellent. I have used one developer, doing a moderate amount of work, for six months, adding the saturated solution to the weaker only two or three times during that time, and it only failed then by becoming surcharged with gelatine by use—very much the same as a silver printing bath becomes charged with albumen. It

must be borne in mind that all ferrous oxalate developers must be kept from the air to preserve them. I always keep mine full to the neck of the bottle, and the bottle tightly corked when not in use. I develop in a flat dish, returning immediately to the bottle after development. A word as to the printing qualities of the negatives. With Eastman's, Cramer & Norden's, and my own make of plates, the printing qualities and looks of the negatives differ but little, if any, from wet plates. With the Beebe plates, the printing qualities are equally as good, but the negative looks very much like an old wet negative strengthened with sulphide of potassium.

(Written for Photographic Mosaics.)

DRY PLATE NOTES.

BY C. F. RICHARDSON.

USE OF ALUM TO PREVENT FRILLING.—With good plates there should now be no trouble with frilling except in hot weather, or when the water and solutions are warm. Even then, most good plates work without danger of this evil; but all chance of it is so easily prevented that it is well to take a little precaution whenever the conditions favor the softening of the film. Alum has been recommended to be used in various ways; before fixing, in the hypo bath, and after fixing and washing. There are objections to both the last two methods which do not apply with equal force to the first. If the alum is applied only after fixing and washing, the plate may frill before reaching that stage. If the alum is added to the hypo bath, there is soon formed a milky precipitate of sulphur, with a smell of sulphuretted hydrogen. Immersion of the negative in this mixture does not seem a wise proceeding. All acids or acid salts (of which alum is one) should be kept as far as possible from hypo solutions that are to be used for fixing negatives or prints.

The best way to use the alum is to pour off the developer, and pour the alum directly into the developing tray; after allowing

it to act for two or three minutes, pour it away, wash well, and fix and wash as usual.

LIGHT FOR THE DARK-ROOM.—During the past year several persons have proposed the use of orange paper for the dark-room window. Since first commencing to make and use dry plates, I have constantly advised the use of orange post-office paper for this purpose, and I had the honor to reiterate this advice at the convention in New York, in 1881.

After four years' experience in its use, I see no reason to change my opinion. As to how many thicknesses to use, the situation of the window should be considered. If the window has a southern exposure, two thicknesses should be used in dull weather, and three in sunshine; if on the north side, two thicknesses are sufficient. That which I use is 20x25 and 30 or 35 pounds to the ream. There is some difference in the color of different samples, and that which is most red or orange should be chosen.

Many dark rooms are lighted by what may be called a secondary light, opening into the operating, or some other room, and never receiving direct daylight. In several such rooms I have developed very sensitive plates without a trace of fog, while the windows were simply glazed with the orange glass usually used for wet collodion. In short, use judgment, and do not think the same treatment suits all locations. Use *plenty of proper* light, but do not expose the plates to any light more than is necessary for their manipulation, for dry plates will be fogged by the safest light yet proposed, if subjected to its influence long enough.

A CONVENIENT BOX FOR STORING PLATES.—When several sizes of plates are in use, the usual grooved boxes occupy considerable space. Take one of the pasteboard boxes in which the plates are packed; cover the corners of both box and cover with opaque black paper; fasten to each side of the inside of the box a flap of the same paper, large enough to cover the top of the box, much the same as the paper is put into boxes for albums, etc. Now unpack your plates, and place them face down in the

box, with clean orange paper between them ; fold down the flaps and put on the cover, and they are quite safe from light. When a plate is wanted, it is the work of a moment to take it out, replace the flaps, and cover as before.

(Written for *Photographic Mosaics*.)

ON THE USE OF SALICYLIC ACID IN THE PYRO DEVELOPER.

BY D. BACHRACH, JR.

UHE writer's attention was called to this subject by the mention made of it at the convention in Indianapolis, and he can cordially recommend it as being all that is claimed for it. The writer has used it for a long time in various ways, especially for the prevention of decomposition of solutions of organic substances, for which purpose it is without a rival, having none of the objectionable qualities of carbolic acid, and is just as thorough an antiseptic. It was first introduced by him in 1877, for preventing the decomposition of sensitized carbon tissue (published in Anthony's *Bulletin*), and it has since been used in our profession extensively for similar uses, and more lately for preventing putrefaction of gelatine bromide emulsion. The latest use of it in the pyro developer will probably be universally adopted, as, in the writer's hands at least, it entirely stops the decomposition of an aqueous pyro solution, keeping it perfectly colorless, and also preventing yellow stains peculiar to the pyro developer, and giving perfectly clear shadows to the negative, causing it to print more like a good wet plate. The writer has kept a three grain solution of pyrogallie acid in water over a month by its use in perfect condition. It does not retard the development in the least. The proportions used are as follows:

Pyrogallie Acid,	.	.	.	.	.	.	60 grains.
Water,	.	.	.	.	.	.	20 ounces.

to which add fifteen grains of salicylic acid dissolved in two drachms of alcohol. This solution is always ready for use in

equal quantity with the solution of bromide and ammonia, for making the developer for dry plates. It would seem, according to the writer's experience, that the decomposition of pyrogallie acid in aqueous solution is very similar to that of other organic substances, and is prevented in the same way.

(Written for Photographic Mosaics.)

YELLOW GLASS FOR THE EMULSION DARK-ROOM.

BY J. HARMANUS FISHER.

I THINK that all workers of gelatine dry plates owe a debt of gratitude to W. Curtis Taylor for his suggestions in regard to the substitution of orange-colored glass for the ruby glass which was before considered requisite. My own experience with the orange has been of the most satisfactory character. The window of my dark-room faces the south, directly to the outer air, and is of size, for the glass, about 12 x 22 inches. In this I placed three thicknesses of the glass and the light in the closet (it is but 4 feet square) is so good that it would be easy to thread a very small needle. Now as to the result with the plates. I have used there both the Eastman instantaneous and Carbutt rapid and extra-rapid plates—have removed them from box to plate-holder while the *rays* of the sun were directly penetrating the window, and developed them while those rays fell upon the plates as they lay in the dish, and all this with satisfactory results—not a trace of fog.

I hope this testimony to the correctness of the views set forth by Mr. Taylor will be the means of inducing others to make use of the same light, and thus avoid groping in the dark at so great personal discomfort, to say nothing of serious injury to the eyesight. I will here add that a single thickness of the same glass is used in my lantern with results equally satisfactory. Here I will enter a query—"Are not Eastman or other marked instantaneous plates liable to be affected by the intense flash of light produced by a parlor match? On a recent occasion while

in the small apartment before mentioned, and, of course, within some twelve inches of an Eastman instantaneous plate which had been exposed, and was then lying in a dish under a thin film of pure water, whilst preparing the developer, I thoughtlessly struck a match for the purpose of relighting my cigar (I am said always to have one in my mouth); I at once felt that the plate was ruined, nevertheless proceeded with development as usual, and was surprised to find it had suffered no injury whatever.

(Written for Photographic Mosaics.)

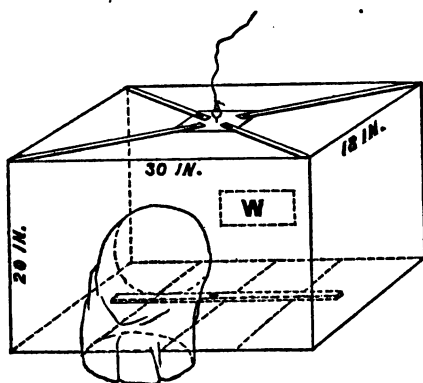
A PORTABLE AND FOLDING DARK-ROOM FOR DRY-PLATE WORK.

BY GEO. H. JOHNSON.

HA VING had occasion, during a sojourn the past summer in the Adirondack woods, to make use of an improvised dark-room, which has proved so practical and satisfactory, I am prompted to send you a sketch and description of it. Its chief merit consists in its lightness, and also that it can be folded and carried in a small space. The wet-plate men have continually asserted, and with truth, that the dry-plate workers do not know what they have *got* until they get home and develop their plates at night. With this simple contrivance, I change the most rapid dry plates from the original packages to the holder, and after exposure, develop them during daylight with no inconvenience and without the slightest fog.

The dimension of the "room" are given in the cut. It is made of three layers of cloth, an orange-colored one inside, a close-textured cloth stained or colored red inside, and a black silesia cloth outside of all; this makes it perfectly tight; the edges of the seam are bound with black braid. The bottom has black rubber cloth on the inside instead of the orange cloth, and 5 pieces of picture board 6 inches wide are sewed between the layers of cloth, a cross-piece of thin wood is riveted under side

the centre-piece which turns around and supports the other pieces when this arrangement is open; when shut, it is turned crosswise, and allows the bottom to be folded up. The pieces are sewed into the bottom so as to allow space between them for folding. There are no corner supporting pieces. The roof, so to speak, is held up by an arrangement similar to the support for a mosquito bar as used to cover bedsteads. It is made of a



small square piece of wood, 4 in. x 3½ in. thick, to which four small pieces of wood are screwed, with a single wood screw in each; these extend to the four corners of the cloth sides; a screw-eye in the centre of the under block serving to fasten a strong cord to it by which the sides are kept drawn up tight. A developing window of ruby cloth at *W* can be inserted, but one of Scovill's pocket lamps is the safer to develop by..

The front has a sleeve screwed to it (with an elastic band on its outer edge) long enough to reach to a person's waist. The sleeve and hole must be large enough to admit of the body comfortably when seated before it. With careful construction this arrangement will not admit the least particle of white light. When not in use the bars on the upper block are turned around all one way and placed crosswise on the bottom, and the whole arrangement is folded up in a very compact bundle. The di-

mensions given give ample room to make 5 x 8 plates with comfort and satisfaction.

Let me say a word more. When printing card-sized prints, fold the paper so that there will be four prints attached together in a sheet. In this way you will save much time in handling. Another *wrinkle*; trim your prints while *wet* with a shear and use glass forms to cut by; this will save time and annoyance and save tearing the paper as is apt to be the case when they are allowed to dry and are then trimmed.

(Written for *Photographic Mosaics*.)

OXALATE OR PYRO?

BY GEO. H. MONROE.

NOW often the question is asked, Which do you prefer, the oxalate or pyrogallic developer? I shall not undertake to say that one method is better than another. Each has its advantages and gives characteristic effects, but I shall endeavor to give what in my opinion is the most practical as well as the most economical method both as regards time in use and expense of material.

In the first place the expense of oxalate as a developer of negatives, when compared with the iron developer for the bath plate, is enormous. The former, in a saturated solution, at fifty cents per pound, and the latter in a twenty-grain solution at eight cents per pound. It is well known how much solution a pound of oxalate will make, and also how fast it disappears during busy times. To be sure, it is a simple developer and in some hands gives very uniform results. Some have tried to use it in dipping baths with oil as a covering, but I am not aware that it is so used by any one at this writing. This method would be very economical if it did not produce so many spots on negatives, thereby necessitating resitting or another trip to the field of view, or perhaps the total loss of a valuable negative. Others have used a bottle, with cork, in which is a rubber tube extending outside to the bottom of the bottle to projected opening,

thus enabling one to draw off sufficient solution for a given plate, then to replace it and use it again as occasion requires. The consequence is that with each successive plate, the solution is more and more oxidized and develops slower and slower, and is finally useless, because it is so slow of action.

Others again use new solution for each plate, and here is where the most expense comes in. My practice is to have a bottle, say sixteen ounces, and as often as I am through with a developing solution I put it in this bottle and save it. Each time I want to develop a plate, I take, say, one to two parts of this spent solution, and one part of newly mixed oxalate ; or, rather, I mix the fresh oxalate in the graduate, and add whatever proportion of old solution I need to get the required effect ; for instance, if an over-exposure, three parts of old solution to one of new ; if under, all new ; if normal, equal parts new and old. By this means one is enabled to get the most use out of the pound of oxalate, and also to get whatever effects are required. But what in my mind makes the oxalate so expensive, at the best, is the long time one has to wait before the development is complete. This going away and leaving the plate in the oxalate is very unworkmanlike. Many negatives so developed, and coming out with streaks and wave-like markings, are often laid to the plate, when in reality it is because the plate lay in the solution undisturbed. It is certainly a pleasure to apply a solution to the plate with one gentle sweep, and in a few seconds see the image appear and grow in beauty and effect, until in half a minute or so it is complete. On the other hand, how distasteful to stand and watch and wait and look for the image, and imagine you see it when you don't, and after a while it comes ; but oh ! so slow, until after, from five to fifteen minutes, the development is complete. One's interest and patience, too, cannot help but flag ; then, perhaps, you have forty or fifty plates to treat. May be your next sitter is waiting, or the present one is in a hurry, still you want to know what the fixed result is before you dismiss them. Such is oxalate practice.

Still in the face of all this, many say it is simple and clean. The pyro is so variable. Well, let's see ; we will take the old method of making the pyro developer in three different solu-

tions: No. 1, pyro; No. 2, bromide; No. 3, ammonia. Take four drops of No. 1, three drops of No. 2, and five to ten drops of No. 3.

I claim that the most skilful worker cannot make his negatives of a uniform character by this method, and with the careless operator it would be simply impossible; he might have his exposure right and developer wrong. Next plate he would change his exposure and perhaps his solution too, and be as far out of the way as ever.

In the above case I will give the palm to oxalate. Now we have a later and simpler form of the alkaline developer: stock-pyro in alcohol; No. 1, pyro and water; No. 2, ammonia, bromide, and water. To develop, take two ounces of No. 1, and five to ten drops of No. 2. Here, again, is a chance for variation; this drop business is not right; one is apt to get too many or too few of them, and with variable results. With the above method, as compared with the first, the chances are as two to three in regard to proportion. But by the latter method plates can be developed *much more* rapid and just as certain as by the oxalate, and for one-fourth the cost.

Now I come to my hobby. The Edward's formulæ *without* the glycerine.

Stock, No. 1.

Pyrogallie Acid,	.	.	.	.	.	.	.	1 ounce.
Alcohol,	.	.	.	.	.	.	.	6 ounces.

Stock, No. 2.

Bromide of Ammonium,	.	.	.	.	.	.	.	60 grains.
Ammonia, Concentrated,	.	.	.	.	.	.	.	1 ounce.
Water,	.	.	.	.	.	.	.	6 ounces.

For the day's use have two other bottles to hold sixteen ounces each; take one ounce of No. 1, fifteen ounces of water; label bottle D. (developer). Take one ounce of No. 2, fifteen ounces of water; label bottle A. (accelerator). To develop (exposure proper), take equal parts D. and A. What can be more simple? The development is complete in less than two minutes at the most, and the results are *very* even, according to the duration of development.

Now, if this is not a saving in time, bring on the rival method. If a plate is over-exposed (5 x 8 plate and tray), take two ounces of D. and one ounce of A.; if under-exposed, one ounce of D., two ounces of A.; very simple and definite. Number of drops of this and drops of that are oftener put in with a squirt than carefully counted. By omitting the glycerine, the annoying bubbles are done away with.

Now, let any one compare this method with oxalate by actual experience. I believe that the above formulæ, costing about sixty-five cents altogether, will develop as many plates much quicker and better than four pounds of oxalate at fifty cents per pound.

During the holiday season dry plates are indispensable, so also are quick printing negatives. It is very desirable that negatives should yield more than one print per day in dark weather. The oxalate many times gives hard, dense negatives. I have seen an 8 x 10 plate cut in half, one part exposed, and a beautiful negative made; a little later the other half developed with the same solution, exposure correct, result extremely hard and dense. It could not be laid to the plate. The oxalate did it. With a very little practice negatives can be made with this last developer, so clean, so even, and so soft, yet vigorous and brilliant, and will print quick as a good negative ought to, that no one will want to return to oxalate. Should it stain the fingers, dip them in a weak solution of muriatic acid. Should it stain the plate or film, alum and citric acid will clear it. I have noticed some who use the carbonate of sodium (washing soda) developer, to which is added a few grains of dry pyro, which is added by rule of thumb; the negatives possess a peculiar greenish tint, which renders them extremely slow printers. Here, again, is the undesirable unmeasured quantity of pyro. One is either obliged to weigh out a lot of pyro "powders," and do them up doctor fashion, or guess at it, and thus get varying intensity. And again, the soda being strong alkali will sometimes act the same as lye on the film and clean it off admirably.

In using the pyro developer (Edwards'), always pour the solution back into the graduate on completion of development, and rinse out the tray. When about to develop another plate,

remove any scum or bubbles that may be on the surface of the solution with the finger, and pour the solution evenly over the dry plate.

(Written for Photographic Mosaics.)

DRY-PLATE PRACTICE.

BY E. P. LIBBY.

SINCE writing you last I have investigated the subject quite thoroughly, and for over six months I have worked dry plates exclusively, the wet process being a thing of the past as far as I am concerned. To the new beginner it requires patience and perseverance to overcome all the difficulties. It would better pay owners of small galleries to go to some one who is expert in dry plates and pay for a few days of experience; it would be knowledge well bought; save more dollars than it costs. As I have turned to dry plates exclusively, perhaps a little of my experience would be of benefit to the beginner. When a man first begins to work he is very prone to over-expose all plates, consequently he gets a thin, flat image which can neither be strengthened or printed with any success; after a few such trials, the photographer gets discouraged and says it is no good, and lays it by as another "Lambert swindle." Such, however, is not the case; with care and judgment as fine negatives can be made as it is possible to make by the old way, in about one-sixth of the time. Dry plates are not rarely, except under peculiar circumstances, ten times as rapid as wet plates, but are fully six to eight times as rapid. Now, for the beginner; let him procure a good brand of plates, and proceed as directed in regard to white light, and see that the tablets are all light-tight; now make yourself a developer after the following:

Take one pound of carbonate of potassium, and dissolve in one gallon of cold water; now add gradually one pound of oxalic acid, and when all effervescence has ceased, filter and bottle; this is stock.

Now make a saturated solution of sulphate of iron, and add one drop to each ounce of pure sulphuric acid.

To make your developer, take two ounces of oxalate solution, and add one drachm of the iron, not two drachms as recommended by most formulas ; now expose your plate one-sixth of the time that you would a wet plate ; after exposure, and in the dark-room, soak your plate for about thirty seconds in cold water ; now pour off and flow the developer gently over the plate, taking care to keep it in motion all the time. If the plate was properly exposed, the image will appear in about the time you can count fifteen slowly, and should continue to develop slowly, but strangely marked in light and shadow like a wet plate. If the image comes out quickly, and the shadows begin to disappear, you may be sure the plate is over-exposed, and you can never make a first-class print of it. *Moral*: Expose a shorter time, have a ruby lamp to develop by, and do not stop the development as soon as you think it ought to be intense enough, as you will generally be deceived, but develop until all but the deep shadows have disappeared. Unless the beginner does this, he will invariably have to strengthen his negatives ; but a properly exposed negative can always be developed to a proper printing density without the aid of strengtheners ; it only needs care and brains. Any negative, properly timed, can be developed until it is too strong by the first development. This is an error many fall into. They stop the development too soon, consequently have thin negatives. Right here let me say that a negative that has to be too much intensified will not have good keeping qualities, while one that is developed just right will keep as well as a silver negative, and looks as cool and gray almost as silver, the image showing on the reverse side quite plainly.

I will now give you a formula for a pyro developer that is excelled by none. Is simple and keeps in stock any length of time ; it develops beautifully, and I consider it far superior to the oxalate.

Stock, Pyrogallie.—To 7½ ounces of common alcohol add ½ ounce of pyrogallie acid, and 60 grains of bromide of ammonium previously dissolved in a little water.

Stock, Bromide Solution.—To 14 ounces of soft water add 240 grains of bromide of ammonium and 1½ ounce of concentrated ammonium. Keep both of these solutions in well-corked bottles.

Now, to develop, take 1 drachm each of pyro solution and bromide solution, and add 2 ounces of soft water. This is sufficient for small plates up to 5 x 8, and will develop several; it makes a very cheap developer, and after once using you will take no other.

Let the beginner bear in mind that gelatine plates need to be thoroughly washed before and after fixing, or they will not keep; change your hypo fixing bath as often as once a day while using pyrogallic developer, otherwise your negatives will have a greenish-yellow color; but by using fresh fixing as recommended, and soaking a few minutes in a strong alum bath, your negatives will be of a beautiful clear gray color, and look like silver negatives. As regards to the cost of plates, I find in my practice that they are about as cheap as wet plates, and when labor is taken into consideration cheaper; and I have no hesitancy in saying that in less than five years there will be no wet plates used.

(Written for *Photographic Mosaics*.)

A WORD OR TWO.

BY FRANK THOMAS.

DURING the Convention at Indianapolis there was a lack of discussion in regard to printing, and I am sorry to say that there was not time or attention enough given to that branch of the business. In the first place I care not how good a negative you have—let it be wet or dry-plate—unless there is proper care taken in the printing, it will disappoint the operator, and if you have taken special care to make a fine negative of some particular subject, you know how great that disappointment is, after turning it over to a careless printer, who makes a dozen prints from it not fit to be turned out of the shop of a “cheap John,” much less from an establishment claiming to do *first-class* work.

Now I say it is just as easy to make good prints as it is in different ones; and all that is required is to use care and that oft-repeated ingredient of Anderson's, “brains.” Unless you or

your operator makes a very even lot of negatives, they should be separated and classed, and paper silvered to suit each class of negative. Some negatives, in order to get the best effects from them, will require the paper to be floated on a much stronger solution than others, and you will have to resort to many little dodges in the printing of them, such as increasing the thickness of the tissue paper in front of them, others to lightly tint the paper first and then print the print. I find in printing that it is best to print pretty deep, and then tone down slowly and well with gold; then if the prints are well washed, there is no fear of fading.

I do not find any more trouble to make a print from a dry plate than I do from a wet, except sometimes it takes much longer to do it. I think, however, the greatest trouble with dry-plate workers is that they overtime, and use too much light in making the negative. I find that there is as much difference between the lighting of a wet and a dry plate as there is between a wet plate and a ferrotype; the same arrangement of light that will make a good ferrotype will not make a good negative, and the same amount of light used for a wet plate will not make a good dry-plate negative. I think I hear some of the old workers exclaim, I knew all that before; if so, it is not for your benefit, but for those who do not know. Still we cannot expect to jump from the wet plate (which we have been working for twenty years) to that of the dry, and make first-class work every time. We have to learn it, the same as we did the wet, by practice; and it takes time and study to do it. The display of dry-plate work at the convention this year was fine and the printing of the same was good.

Now let us all try what we can do, in the way of improvement, for the convention, next year at Milwaukee; and now is the time to commence. Let us see if we cannot double both the display of good work and attendance of members. This year was a big improvement over last, and let us make next year a big improvement over this; by close attention and study I am sure that we can improve our work, and the better work we make the more of it we will have to do, and the better prices we will get for it; but if you cut on your prices you are sure to slight

your work. My advice is, stick to your prices and *improve* your work. Make it of a better quality and more artistic, and you will win in the end. Don't forget to have your face on the card next year.

(Written for *Photographic Mosaics*.)

CONSIDERING EVERYTHING, I LIKE IT.

BY WM. MCCOMB.

I HAVE used the gelatine bromide dry plates exclusively in my gallery for the last eight months. I have taken quite a number of negatives which I would not have been able to take by the wet process. Taking everything into consideration, I don't think that the dry plates are more expensive than the wet; because by the wet process I might have to make several exposures of a nervous sitter, or of a child, before I could get a satisfactory negative; but by the dry process I generally get a good sharp negative the first exposure. I have no trouble with frilling. Of course I keep all of my solutions cool. I have a ruby-glass window, and a ruby glass in my door to my dark-room; when the door is closed a person can read in any part of the dark-room.

The following is my method of using the gelatine dry plates:

Solution No. 1.—1 lb. neutral oxalate of potash in 3 pints of hot water; let cool and filter.

Solution No. 2.—Pure protosulphate of iron 7 ounces in 15 ounces of water, dissolved; when settled, filter, and to each pint of solution add 8 or 10 drops of sulphuric acid, C. P.

To develop a 5 x 8 plate, take 2 ounces of solution No. 1, put in blue litmus paper, and add a few drops of saturated solution of citric acid until the paper turns a decided red; then add 1½ drachms of solution No. 2. By rinsing the plate before developing, the solution will flow easily over the plate. Pour the developer over the plate quickly, and keep the tray in gentle motion. If I find that the plate is developing rather slow, I add about 10 drops to each ounce of developer of a hypo solution made up of 5 ounces of water and hypo soda 20 grains.

Fix in a solution of water 1 gallon, hyposulphite of sodium 16 ounces. After fixing place the plate in a tray containing a saturated solution of alum.

If the negative needs any intensifying I use the following :

No. 1—Bichloride of Mercury, . . .	60 grains.
Hot Water,	6 ounces.
No. 2—Iodide of Potassium, . . .	90 grains.
Water,	2 ounces.
No. 3—Hypsulphite of Sodium, . . .	120 grains.
Water,	2 ounces.

Dissolve all separately, then pour No. 2 into No. 1, then add No. 3.

Wash the plates well in cold water after fixing and intensifying.

(Written for Photographic Mosaics.)

DEVELOPING COMMON GELATINE PLATES IN THE TROPICS.

BY J. TRAILL TAYLOR,

Editor Photographic Times.

THOSE who have occasion to develop gelatine negatives in a hot climate and at a distance from an ice market, not unfrequently experience an amount of trouble and vexation which well-nigh tempts them to forswear gelatine for ever.

It is under such circumstances, and after the film has melted and is seen running down the face of the plate, that the photographer feelingly sighs after collodion, which never plays any tricks of this nature. Gelatine plates we know may now be had which are unaffected by water or solutions of a moderate degree of warmth; but, on the other hand, by far the great majority of plates are not thus callous to thermal influences.

The problem here to be considered is narrowed into a very small compass, and may be propounded in the form of the following question? *How can a gelatine plate be developed when the thermometer stands in the vicinity of 90° Fahrenheit, and there is no cold water at hand?*

Let us assume that the ferrous oxalate developer is to be employed. The first thing is to mix and pour it into the bath or pan in which the development is to take place, no more of the solution being employed than is necessary to the perfect covering of the plate. This developing bath must be set into a second vessel of the same form but much larger, larger at any rate to this extent that a space of not less than half an inch shall exist clear all round and between the bottoms of the two. The outer and larger dish may be made of tin, but it is of importance that it be lined *outside* with wood, felt, or millboard, so as to render it non-conducting.

When all is ready for proceeding with developing, scatter a few crushed crystals of nitrate of ammonium over the bottom of the larger pan, then lift in the other containing the solution, and lastly pour in a quantity of the nitrate of ammonium crystals, so as to fill the space between the sides and ends of the dishes. Next pour in water among the crystals, so as to dissolve them; and this simple act will be productive of a degree of cold so intense as to bring down the fluid to the freezing point, as will be indicated by a thermometer which may be immersed in the solution. This great cold around and outside of the developer quickly reduces its temperature so low as to render it quite incapable of exercising any solvent action on the gelatine film.

In like manner may the solutions of alum and hyposulphite of sodium be cooled, as well as the water in which the plate is washed. This completely meets the case as regards the development of gelatine plates in the tropics.

(Written for *Photographic Mosaics*.)

GEMS FROM GERMANY.

BY DR. H. W. VOGEL.

UN THE other day I made an emulsion in very concentrated solution: 4 parts of gelatine in 50 of water, to which was added: 12 of bromide of ammonium and 20 of nitrate of silver, dissolved in 50 of water.

The silvering took place in a quite normal way, but curiously enough, the emulsion obtained would not coagulate in the cold.

I placed the emulsion on the ice for twelve hours and yet it retained its liquid form.

I then reduced the strength of the solution, by dilution, to one-third of its original strength and cooled it again, when the emulsion began to coagulate in a very short time, showing the foregoing phenomena to have been caused by the presence of the salts, which prevent the coagulation in concentrated but not in diluted solution.

Recently it has often been tried to substitute in emulsions another preparation for the gelatine, thus far, however, with only partial success.

EDER made emulsion with gum-arabic, but did not succeed in obtaining therewith the sensitiveness of gelatine emulsion

Paste was tried, with very poor success, however, and experiments with water-glass and the Chinese agar-agar also gave no satisfaction.

Now, there is some talk about adding albumen to the emulsion, by which satisfactory results are said to have been obtained.

I myself have much experimented of late, with a view to substitute collodion in place of emulsion, and have found that it is extremely difficult to make a *pure* collodion emulsion of the sensitiveness of the gelatine emulsion.

The bromide of silver which forms in gelatine solutions, is of quite a different nature from that found in collodion emulsions: only the first-named combination is brought to the highly sensitive condition through boiling, but not the latter.

One can, of course, get highly sensitive bromide of silver in gelatine emulsion, and after washing add it to the raw collodion; but by this manipulation only a coarse-grained emulsion is obtained, the bromide of silver of which speedily disintegrates.

It is quite different when the collodion contains gelatine.

The gelatine can be added to the collodion, when it has been previously dissolved in glacial acetic acid.

On such a mixture the highly sensitive bromide of silver is beautifully distributed, and forms the product called "*Vogel's Emulsion.*"

If this product disintegrates in time, in some single instances, the reason is that the acetic acid forms with the alcohol acetic ether, which precipitates the gelatine.

It is easy, however, to restore such products, by heating the same in the water-bath, whereby the acetic ether disintegrates, and then adding fresh acetic acid.

Recently I succeeded in making a collodio-gelatine emulsion which contains no acetic acid at all, whereby unlimited durability is insured.

In any case, we must expect to see various modifications of the customary process brought about by the continued efforts to find a substitute for gelatine.

Recently, CHADONNET found that silver mirrors, appearing to our eye to be quite opaque, are penetrated by ultra-violet, photographically effective light. The light which has penetrated such a mirror is not perceptible to our eye. In this way one may obtain photographs of objects which are illuminated by invisible light. It is, of course, to be presupposed, that the objective is able to reflect these invisible, most frangible rays, that it possesses "actinic color."

It is of very striking effect, as an experiment in the lecture-room, to photograph an electric "light-bow," which has been shut up in a lantern of the above-described opaque material. Although the light-bow is invisible, in a very short time a distinct picture of the electric light is formed upon the sensitive plate.

I have on a former occasion recommended in my letters to you, EDER'S cyanide of mercury intensifier, and continued experiments have confirmed its effectiveness. I will give you the recipe once more :

Water,	.	.	.	.	.	.	1000	parts.
Cyanide of Potassium,	.	.	.	.	.	.	5	"
Iodide of Potassium,	.	.	.	.	.	.	2½	"
Chloride of Mercury,	.	.	.	.	.	.	2½	"

It is best to dissolve the chloride of mercury in half the quantity of water, as stated above, then to add the iodide of potassium, dissolved in one-fourth of the water, and then the cyanide of

potassium, dissolved in the balance of the water. The negative appears first yellow, then coffee-brown, and fades again somewhat, with continued intensification. Unfortunately the intensifier disintegrates soon, but it can be at any time restored by the addition of cyanide of potassium (at the utmost five grammes to the stated quantity). It sometimes happens that negatives which have been long in the chloride of mercury are rapidly intensified in the thin spots, and much more slowly in the thicker parts (sky in landscapes, for example), so that the latter appears yet white on the back while the rest is brown.

If one then intensifies still more, the intensity of the thick spots increases, while that of the thin spots gets less.

Under such conditions it is well, with negatives of moderate thickness, to interrupt the intensifying before the back of the sky has become quite brown.

Some time ago a large number of negatives were treated experimentally in my laboratory with EDER's and EDWARD's intensifiers, and at the same time CHARDON's and the iodide of potassium-mercury intensifier were tried.

The result was that EDER's intensifier proved superior to all others, and it owes this, no doubt, to the beautiful coffee-brown color it gives. It is, however, to be remarked that the tendency to detach and form wrinkles, which many plates show, is very materially increased by the cyanide of potassium intensifier.

The carbon printing process, which seemed to be in a fair way of becoming a great favorite some four years ago, loses ground more and more every day.

For paper pictures it is not used at present in Germany, except by BRAUN, in Dornach, who makes his reproductions with it.

Sometimes the process is used for positive pictures upon glass, very seldom for the public, but in most cases to make enlarged negatives.

Now, for the same purpose, in place of the carbon process, gelatine plates are used.

It is easy to print therefrom with gaslight, in the printing-frame, a positive picture which, as regards fineness, is at least

the equal of a carbon print. The gelatine plate is much used also for the production of lantern slides.

We get in this way more and more into the silver process, and it appears that the experiments to substitute another metal for silver give at present little hope of success. Remarkable in this respect are the experiments of WATERHOUSE, who exposed bromized copper plates and developed the same alkaline. Of course they are not as sensitive as bromized silver plates.

Much more prospect of success the platinum process has for making picture papers. WILLIS used the same practically for years, but not until now were the complete practical details established by experiments through PIZZIGHELLI and HUBL, in Vienna, who published a book on this subject which was rewarded with the gold medal by the *Photographische Gesellschaft* of Vienna.

I will give you herewith a sketch of the interesting process from an advance sheet of my book, "Progress of Photography since the year 1878," which will be published in America soon, and which treats quite exhaustively all photographic innovations made during the last four years.

As raw material for preparing the papers, PIZZIGHELLI and HUBL use chloride of potassium and oxalate of iron; a mixture of one part of the former with from one to one and two-tenths of the latter.

As paper, PIZZIGHELLI and HUBL recommend the so-called ivory paper, hot-pressed and not hot-pressed, manufactured by G. ROEDER, of Vienna; said paper requiring, however, a preliminary preparation with gelatine or arrowroot; letting the paper float from two to three minutes upon a one per cent. solution of the above substances.

Gelatine produces more blue-black, arrowroot more brown-black, tones.

PRELIMINARY PREPARATION.—1. 10 grammes of gelatine soaked in 800 cc. of water, then dissolved at 48° R., when 3 grammes of alum and 200 cc. of alcohol are added, the latter being used in order to prevent the formation of air-bubbles.

2. 10 grammes of arrowroot are ground in cold water, then poured into 800 grammes of boiling water, when 200 grammes of alcohol are added.

As in drying, the bottom side of the paper is thicker than the other, it becomes necessary to float the paper once more after drying, and to suspend with the draining side.

The platinum salt required for sensitizing, viz., chloride of potassium (not chlorite), can be bought easily. It is dissolved in six parts of cold water, where it must be dissolved entirely. The oxalate of iron, however, cannot be kept in permanent combination, and requires therefore, before use, a chemical analysis. Normal iron solution, however, is sold in the market; it must not become turbid when boiled in ten times its quantity of water, nor show precipitate with prussiate of potash.

SENSITIZING LIQUID.—24 cc. of platinum solution, 22 of iron solution, 4 of water. When greater brilliancy is desired, chlorate of potash is added. To 100 cc. of the artificial normal iron solution, 4 grammes of chlorate of potash are added (chlorate of iron solution). Then mix with 24 cc. of platinum solution, 18 of iron solution, 4 of chlorate of iron solution, 4 of water.

For reproductions for artist's work PIZZIGHELLI and HUBL recommend diluting this solution with an equal volume of water.

Fasten the paper with paper-fasteners, and lay on the solution uniformly with a flannel pad, or a brush, so that no streaks are visible.

These manipulations must take place in a half-darkened room. PIZZIGHELLI and HUBL recommend subdued daylight (in lamp-light the liquid is hardly discernible), as the paper is three times more sensitive than silver paper. The paper is then dried at 24° to 30° R. The drying must not be too quick nor too slow.

The pads for laying on the solution must be changed every quarter of an hour. The mixed sensitizing solution must be used up quickly. The dried sheets are kept in chloride of calcium boxes. Absolute dryness of the sheets is indispensable.

The picture appears only faint in printing. The yellow paper becomes brown in printing, and later again somewhat lighter.

The duration of printing is about one-third only of the time required with silver.

For developing, PIZZIGHELLI and HUBL recommend an enamelled-iron cup, which is to stand in a hot-water bath of from 64° to 68° R.

As developing fluid, neutral oxalate of potash dissolved in a treble quantity of water, and acidulated with some oxalic acid (acid reaction necessary), is used. The pictures are drawn slowly through the hot solution; the developing takes place instantaneously, the picture turning deep black in the operation. It is then placed at once in a solution of one part muriatic acid in eighty parts water, which acid is changed often—until the liquid stops turning yellow. Finally, the pictures are washed in order to remove the acid.

The developer keeps a long while. From old developers the platinum is reclaimed by boiling in one-fourth saturated sulphate of iron.

The value of the process lies in the chemical durability of the picture obtained, and the ease and rapidity of the manipulation. The paper is, however, somewhat dear—a quire costing six dollars.

(Translated for *Photographic Mosaics*.)

FRENCH PHOTOGRAPHIC FANCIES.

BY LEON VIDAL.

IT may first be well to refer to some experience in supplementing what has been done by our colleagues by some hints addressed to the new adepts of our art. They will meet with a state of things much more pleasant for them than we found when we made our *début* in the photographic world. Gelatine-bromide, which gives us already prepared, dry, sensitized plates of great rapidity, has much simplified the operations of reproductions by light. The beginner, having at his disposal the sensitized films, has only to occupy himself with the manner of using them. Now this may seem very easy, and, in fact, it is

really not a very difficult thing; nevertheless, a number of amateurs after some failures, due to their want of experience, become discouraged, and end even by abandoning this mode of reproduction, so attractive however, and to which those who succeed owe so many agreeable emotions. To what are to be attributed those failures? We can answer this in two words: to the complete ignorance shown by most beginners, first, of the kind of lens best suited to the kind of reproductions they wish to make; and, second, of the proper knowledge of the time of exposure.

These are the two stumbling-blocks which it would be so easy to avoid by giving up a few moments to the study of these two important points of the photographic art, and especially in outdoor photography. How often do we see lenses used at random, those sold with the outfit by the photographic dealer? With one lens, either single or double, it is thought possible to obtain any kind of reproduction. This is a serious error, giving rise to many failures. In our opinion it is necessary to have at least two lenses; one aplanatic and the other with a wide angle. The first will enable us to work with a large opening and to obtain instantaneous views. The other is more especially adapted for reproducing views and monuments; will give very great delicacy in the successive planes, but requires small stops and consequently is unsuitable for instantaneous reproductions.

It is evident that if we operate with a stop of 25 millimetres (1 inch), instead of employing one of 10 millimetres ($\frac{1}{4}$ inch) we will have, all other things being equal, a rapidity about six times greater, since the admissions of light vary as the square of the surfaces of admissions. Hence, $25 \times 25 = 625$, and $10 \times 10 = 100$. The stop of 25 millimetres (1 inch), has a surface more than six times greater than that of 10 millimetres ($\frac{1}{4}$ inch). It is easy to conceive that if with this stop, the time of exposure in full light is hardly a $\frac{1}{2}$ second, it will be with that of 25 millimetres (1 inch) $\frac{1}{10}$ or $\frac{1}{180}$ of a second, a duration of time impossible to determine by the eye, and which can only be measured by means of a chronometric stop. The exact time of exposure being given, a thing not often possessed by amateurs, it is impossible to realize the duration known or calculated without the use of a special appliance. We only know of one chro-

nometric appliance, namely the Boca stop made by Mr. Rédier. The principle of this instrument is perfect, but it has the fault when in operation to cause the camera to vibrate, thus producing images wanting in sharpness. It is, therefore, very necessary in using the Boca stop to render the camera sufficiently solid to resist this motion. When using large cameras this trouble does not occur, but the cameras of photographic tourists are generally very light, and then the vibrations are the cause of serious failures. It is now customary in some houses furnishing lenses to graduate the stops by relation to surfaces. Thus, the largest would be marked 1, I suppose; that of the following number would be marked $1\frac{1}{2}$, which means, that everything else being equal, the exposure should be $1\frac{1}{2}$ times more. The others would be numbered 2, 8, 16, 32, and 64, which means, that according to the stop used the exposure should be 8, 16, 32, or 64 times greater than with the first. This custom is an excellent one, but is not sufficient to determine the time of exposure according to the variable intensity of the light during the day. Why, therefore, do we see so seldom put in use some one or other photometric method capable of determining the luminous intensity? At every moment this is necessary according to the hour of the day, and also if the exposure is made in a more or less lighted locality. Under trees, for example, in a forest there is much less light than in the open, and the intensity of the shadows varies according as the trees are more or less leafy, and that the sun is more or less high in the horizon. In such a case we see amateurs guided by chance alone, and we also see how many plates have to be discarded, and the disappointment after an excursion at meeting with such failures. If they were to use a photometer of the kind made use of by us, giving the luminous intensity at every moment by means of a simple fragment of sensitized paper, they would avoid absolutely all causes of error arising from a faulty exposure.

What surprises us is that so much attention should be paid to developers and so little to the time of exposure, while this last plays the most important part in out-door photography. As for us our sole pre-occupation, when we go out with our camera, lies in the time of exposure. The rest gives us no concern, and

all is well if we have exposed properly. We cannot, therefore, too strongly advise the beginner to convince himself of the importance of the luminous intensity, and after having done it for a short time he will acquire an instinct which will allow him afterwards to properly judge the light with a greater degree of approximation.

Bitumen of Judea and bichromate of potash being soluble in ammonia, as we are told, it would be possible to make a solution of these two substances, giving sensitive films with the average sensitiveness of bichromate of potash, and the resistance of acids to bitumen of Judea. We do not yet know what this idea is worth, but it is well to repeat here that continuous efforts should be made to find a substance, either simple or compound, possessing the double advantage of great sensitiveness combined with perfect resistance to the action of acids. In this connection, let us mention a fact that has been pointed out to us, and which has some importance. The solution of bitumen of Judea in *soleine*, a kind of mineral oil, appears much more sensitive to light than the solution in benzine, and this solution forms films which combine better with the coating of bichromatized albumen of which we have already spoken. If on a film of bitumen of Judea we put bichromatized albumen, this liquid will not cover as well the bitumen, and its adherence to the bitumen film will be less strong than if this mineral compound is dissolved in a suitable liquid. Now *soleine* seems to be what is required, as it prevents the injury which otherwise would be produced by the penetration of the solvent of the bitumen when the development takes the place of the albumenized film coagulated by the light.

(Written for *Photographic Mosaics*.)

BITS.

BY E. POOLE.

FOR retouching dry plates, procure a bathbrick (light color), cut in two, rub two pieces together and you have a splendid retouching powder. Rub the unvarnished film and a fine tooth is produced; do all the retouching necessary, and

then varnish. The writer invariably retouches before varnishing. Try it, everybody!

Keep your printing bath well sunned, well filtered, and positively alkaline (by using liquor ammonia), then rich prints ensue.

In sensitizing I use the two short sticks laid on the back of the floating paper, as suggested in a former issue of *Mosaics* (only needed in winter).

Each time the printing solution is emptied from the dish, a piece of stout cardboard with a straight edge (a C. D. V. mount would answer) is used, as it were, to scrape the dish towards a corner, thus obviating draining of the dish, and saves quite a little solution. The whole bottom of the dish is scraped except the corner towards which the solution runs.

In toning always see that the bath is ripe. Some baths ripen much quicker than others.

To perfectly fix prints on double albumenized paper, take 1 ounce hypo to 8 ounces of water; fix 25 minutes.

The grandest eliminator of hypo, both from gelatine negatives and prints, is *eau de javelle*.

The only effectual remedy proposed by Mr. HERMANN GUENTHER, of Berlin, is the "*eau de javelle*"—that is, the scouring drops used by some laundresses, one litre costing three-pence—which is in substance a solution of hypochlorite of soda. This gives the oxygen of the hypochlorous acid to the hyposulphurous acid. The freed chlorine combines with the hydrogen of the water to form hydrochloric acid. The oxygen of the water gets free and goes again to the hyposulphurous acid, which will, consequently, be reduced in a few seconds to sulphuric acid. The process is, therefore, just the same as with the appropriation of hyposulphite of soda as antichlorine in bleaching, only that there must be, in our case, where the strength of the paper-filament is immaterial, an excess of hypochlorite of soda.

The procedure is, therefore, as follows: Put the pictures immediately from the soda into three litres of water, containing about twenty cubic centimetres (a tablespoonful) of *eau de javelle*, and from this lotion into another one composed in the same way. For the third time the pictures are again washed in

water, and are then ready. They do not suffer at all in these baths, and excel in their admirable whites.

As the pictures are only washed for a short time they obtain a rare brilliancy, and the blisters, frequently so injurious, are totally harmless. In one word: whoever has once tried this simple, radical, and quick method will never have recourse to any other. It is especially invaluable for photographers who use only a small quantity of water.

Another practitioner writes as follows:

GENTLEMEN: Reading in the *British Journal Photographic Almanac* for 1879, p. 132, an article relative to the Elimination of Hyposulphite of Soda from Prints, and having followed that plan for eighteen months with perfect success, it struck me, about six months ago, that it would also succeed with gelatine negatives. Having tried it I have found it answer perfectly, and save much time and annoyance.

My plan is this: As soon as the negative is removed from the fixing bath, I flow over it for about a minute the following:

<i>Eau de Javelle</i>,	.	.	.	.	.	.	.	1 drachm.
Water,	.	.	.	.	.	.	.	2 ounces.

and wash well for a minute or two with water, when all trace of the hypo will have disappeared.

I have recommended it to several professional dry-plate workers, who tell me that it is a great boon to them, and they are now never troubled with a crystallized surface from insufficient washing.

Eau de javelle is inexpensive and easily made. The following, from the *Druggists' Receipt Book*, is the best method with which I am acquainted:

Dry Chloride of Lime,	.	.	.	.	.	.	.	2 ounces.
Carbonate of Potash,	.	.	.	.	.	.	.	4 "
Water,	.	.	.	.	.	.	.	2 pints.

Mix the chloride with one and a half pint of water. Dissolve

the potash in the other half pint. Mix the solutions, and filter.

Well corked, this solution will keep indefinitely.

I am yours, etc.,

ADJEDAUMO.

My mounting paste is simply stiff cornstarch paste well boiled and allowed to cool. I always add a little carbonate of sodium before boiling. Beat this up thoroughly before using.

(Written for Photographic Mosaics.)

STAND BY THE PRICE.

BY J. F. RYDER.

STAND firm! Make the highest figure possible, and stand by it squarely. Let it be a matter between your judgment and your conscience. Make your work so carefully and of such excellence that you *know* you are entitled to a good price. If you are honest with yourself and your customers, your high figure must be a constant incentive to keep the quality up to your price.

You can feel more respect for yourself, and will challenge the respect of your patrons.

Teach the public to understand there is a value in your productions; that skill and painstaking care must be paid for. It is too much a fact that many people think photographs cost nothing worth mentioning, and are regarded as common as tooth-picks upon a bar counter.

If you have a few overprints in filling an order better throw them into the waste-basket than toss them carelessly to the customer to make "good measure." You are cheapening your production, and teaching the recipient to put a low estimate upon them.

The road to a better condition in our pursuit will be found in increased and firmly held prices. Take it!

(Written for Photographic Mosaics.)

PLEASE PAY IN ADVANCE.

BY WELL G. SINGHI.

IF every photographer would adopt the above, he would be happier and better off financially in less than six months after doing so.

Please pay in advance—I don't mean let the customer sit and then show him or her proofs before you get your pay. Nor do I mean to let the customer sit and then take the order—but pay in advance. Take the order before they see the operating-room; then you know just how many cards, cabinets, or any other kind of pictures they want. Now, suppose a customer wants six cabinets, you could not afford to make as many negatives for them as you could if they wanted a dozen or two; and you do not know how many they will take until you get your pay; they will take all they pay for. So I say, please pay in advance, and everything goes smooth. You show proofs, and they like them much better if paid for in advance than otherwise. If not paid for they think they will try again, and so they do—at the other man's gallery.

I know I am writing from genuine experience; for six years ago I made negatives, and then got my pay if I could, and I could not at all times; so I had lots of trouble with some of my customers. Some you know are nice at all times and in all places; I am not writing about that class, for they will not take back, but comply with your request of please pay in advance. As I said before, six years ago I had lots of photographs on hand not called for, and, of course, not paid for; also had bills not called for (they are not called for yet). I said to myself, I would rub out and commence anew. I destroyed all the photographs and bills, placed a sign at the order desk—PLEASE PAY IN ADVANCE. That was in 1876, and that sign is at the desk now. I have no pictures to be left on my hands, and I have no bills to collect. I stick to the rule, please pay in advance, and make no negatives until paid for. In 1876 I did all my work—now it takes four hands to do it—so my business has not run down on account of please pay in advance. My checks that I

hand to customers after taking their order, read thus: "TERMS CASH when your name is registered; our friends will please help to sustain this rule by complying." I hand this check to the customer and he knows at once what it means, and if he don't want to pay, that is the end of it; rub his name off the book and say no more. I let them do the arguing if there is any done. At first a few went away, but now not one in a month, except those who have no money.

(Written for *Photographic Mosaics*.)

BUSINESS versus ART.

BY E. D. ORMSBY.

IN an age of the world when our best painters in order to live find it necessary to paint "Pot boilers," attach their names and place them on the market to the highest bidder at auction, I am of the opinion there is very little encouragement for photographers to spend their time studying art principles in order to apply the knowledge so gained to photography. Although I have always advocated to photographers the study of art principles, and their application to photography, and have always maintained "there is plenty of room on the upper floor, and that true merit will always win," it appears to me in these degenerate days, that those on the upper floor are being pressed to the wall; they have been obliged in many localities to lower their prices for fine artistic work to the same level as good mechanical work, by those who have devoted their attention to the study of business principles, and let the art principles go.

In looking around me, I observe those who are making the greatest success financially, are not the ones who are making the highest quality of work artistically; but, in many cases, those having no knowledge of artistic photography, who employ others to do their work, and devote their whole attention to the business department of their establishment.

The general public are not educated in art to appreciate artistic photography enough to pay a higher price for it than for good mechanical work; in fact, I am of the opinion they would *prefer*

strong and smoothly retouched flat mechanical work, to fine artistically posed and lighted work, full of half tones with brilliant high-lights and deep transparent shadows.

I know of a gallery that ranks first-class, that makes cabinet photographs of "professionals" at ten dollars per hundred, that took a medal for excellence at the Philadelphia Centennial, also Wilson's Prize Medal, besides others, whose work has been highly prized by the fraternity for its artistic qualities.

Well! what are you going to do about it? Educate the public? Life is too short; and a new crop of fools is born every year.

(Written for Photographic Mosaics.)

THREE THINGS THAT MAY BE WORTH A DOLLAR TO SOME ONE TO KNOW.

BY F. M. SPENCER.

ENAMELLED cards may be burnished without injury to the enamel by placing an unenamelled card of the same size upon the back of the enamelled card and passing both through the burnisher at once, by this means the roller does not come in contact with the card to be burnished. It may be a little awkward at first but perseverance will make it easy. One plain card will answer to burnish many hundred enamelled ones.

FLUID GLUE.—Take 2 ounces of any good glue, or better of Cox's gelatine, and put into a 16-ounce wide-mouth bottle, and add 2 ounces of water and allow to stand until the water is all absorbed; next melt by plunging the bottle in a hot-water bath, and allow it to heat up to near boiling temperature, then allow it to cool spontaneously until the glue is well set in the bottle, then add 8 ounces of alcohol and melt again in the hot-water bath, stirring until the glue is again well melted. Should the glue not melt and mix in the alcohol, add a little hot water, just enough to complete the solution. No two samples of glue will act just alike, but the less small the per cent. of water, the lower in temperature will the glue remain fluid. It ought to remain fluid at any comfortable temperature. It makes a good mounting paste where very thin mounts are used; the writer

has mounted well dried prints on the leaves of an ordinary pass-book with this preparation without cockling, and it is the best ready paste I have ever found, and being free from any deleterious substance it can be used anywhere safely. Try it.

SCHERING's Celloidine makes a splendid collodion, and the formula sent with it is worth many times the \$1.00 paid for a sample package. The formula works to a charm with any good cotton. It can be obtained of BACHRACH & BRO., Baltimore, Md.

(Written for Photographic Mosaics.)

ON THE TONING OF READY SENSITIZED ALBUMEN PAPER.

BY KARL KLAUSER.

THE French sensitized paper is now extensively used by both amateur and professional photographers. It yields prints more brilliant than any made with freshly prepared albumen paper, but trouble has been found in toning the prints thus obtained. Having used the French paper for the last six years (by direct importation *) with best results, my experience in obtaining a beautiful (so-called "English") color may be of some value to the young "amateur," and perhaps to the older "professional."

I prepare my toning bath as follows :

A.—Borax,	1 ounce.
Hot Water,	60 ounces.
A pinch of common salt.	
B.—Chloride of Gold,	15 grains.
Water,	15 ounces.

Add four ounces of B to A, and let stand for twenty-four hours. This bath can be used over and over again by occasionally strengthening it with one half to one ounce of B.

After washing the prints in three or four waters, immerse them in some of your old and spent gold-baths. This will receive the first shock, eliminate any unknown acids in the prepared paper (the preparation of it is as yet a secret), and

* From the firm of L. Puech, 21 Place de la Madeleine, Paris, France.

when the prints are sufficiently brick-red, transfer them to your toning bath, when they will soon turn into a warm purple. Fix in a rather strong hypo solution (with addition of a pinch of salt) for ten to fifteen minutes. Immerse into a saturated solution of table salt for five minutes, and wash in a rotary wash-stand (with siphon) for half an hour.

My prints, thus treated six years ago, do not show the least sign of fading.

(Written for Photographic Mosaics.)

LEARNING BY MISHAPS.

BY E. LONG.



WE often learn as much from mishaps as from successes; and if each one would state clearly his odd troubles, and how he got over them, probably he would help a hundred others who had stumbled over the same log.

I met a new one lately, and at first it bothered me; but when I came to look straight at it to find the cause, it came to light.

I had built for my solar house a large, new cistern, and as soon as the cement was hard (say in about three weeks), a rain came and filled the cistern completely. I commenced using the water on prints, and found no trouble, nor any on negatives, till in making some which required strengthening. I redeveloped first with pyrogallic, but to my surprise the negative was turned into a stained positive; of course I laid it to some unknown foreign matter in the pyro; but in making new I met the same effect. I then tried redeveloping with silver, and behold the same result. I then took water from the old cistern, and had perfect success in redeveloping to any extent with either pyro or silver.

The trouble was from the lime in the cement which had partly saturated the water, and falling on the plate while the developer was still, or united with the iron, forming a precipitate of iron and lime in some combination I have not yet found out what.

Now somebody else tell what log they stumbled over.

(Written for *Photographic Mosaics*.)

DRY PLATES, OR WHAT?

BY T. M. SCHLEIER.

SHALL I speak of dry plates, or what? True we have not reached all the kitchen and bar-room paraphernalia, as in the old collodion dry-plate preservatives, such as coffee, tea, beer, ale, etc.; but there will, no doubt, be plenty of disciples of the dry plate, who will belabor the subject in your welcome *Mosaics* to every heart's content, so please allow me to pass.

Yet a word in its favor will not be amiss. If the mass of beautiful work exhibited at the Indianapolis Convention made with the dry plate, and the easy method shown how to make them and how to develop them, has not made of every member present a convert to using dry plates, I will simply say, he is lost beyond redemption, and may the silver-bath have mercy upon his black fingers.

And now of what else shall I speak? Shall I tell you of a dream I had in which the silver-bath had also disappeared from the printing-room, and permanent pictures just as beautiful and in less than one quarter the time were made? But, no; let us yet battle a little with measly prints, those charming blisters, and finally, with faded photographs. The photographer's millenium has not come yet.

Now I will cross over. No one will dispute that the Indianapolis Convention was a success, and we certainly recognize the zeal and hard work performed by those who had the management; and again, admitting that the P. A. A. is yet but a child and must crawl before it can walk, yet we must not forget that the successful man is only the outgrowth of a well-trained child, and that a well-laid foundation is necessary to the future growth and existence of a "Photographer's Association of America."

I heard a member say he did not come to hear parliamentary rules, he wanted more photography. You are perfectly right, my brother, and you will get double and quadruple the amount

of photography if only a little more parliamentary ruling will be observed. If our future conventions will have more system on true business principles, our sessions governed with more parliamentary exactness, then will we have more time for photography and pleasure. Good-bye.

(Written for Photographic Mosaics.)

A FEW REFLECTIONS.

BY J. E. BEEBE.



So very many of the editor's good friends will furnish him special articles on special subjects, I shall take the opportunity of making my contribution reflect something of the character of the name under which it is published, viz., a mosaic.

The first matter that I wish to bring before my fellow-workers, is in relation to past conventions and those that are to come. Many of our editorial friends on this side of the ocean, and more on the other side, have taken occasion, when commenting on our last splendid meeting, to find fault with the lack of depth and erudition displayed in the contributions offered in the shape of papers, thinking, evidently, that the mere fact of a paper being read before a body of men would call for a ponderosity that it otherwise would not possess. Now, is there not something to be said in relation to the actual needs of the photographer, as contrasted with what might be called his ideal necessities.

There are in our ranks, as in all the skilled professions, a number of careful thinkers and searching investigators; men such as EDER, ABNEY, and NEWTON, who submit every problem to the crucible and test-tube, and who spare no pains to spread the result of their labors on record. Others there are who, in a somewhat less degree, search out facts, but who are mighty in argument, and who will dissect new theories until it is difficult to know how the subject originally looked.

That these workers are of inestimable value is beyond a doubt, and that owing to their pioneer work Photography is what she

is, is also true. But do they come as close to the every-day worker as is needful? Now then, we are coming to our annual conventions; do they fill the gap? If so, how? If not, why not?

The great animating cause of our yearly meeting is the advancement of photography and photographers, and on this common ground the advanced thinker and humble worker must meet.

From a somewhat careful study of the subject, I think I can safely say that, taken as a whole, photographers are much more artistic than scientific. I have yet to meet one who did not enjoy a beautiful print, or a fine negative, more for the beauty of the one, and the possibilities of the other, than for the scientific and chemical causes that produced them. Is it not true that all the great names in photography are the result of choice work? Are the choice workers, as a rule, good or great chemists, profound thinkers, or great experimentalists? I think not.

Who, then, are the men that the photographer wishes to see and hear at our annual meetings? If the real facts could be gotten at, the artistic photographer would have a following that would make that of the man of science seem very small.

If my premises, then, are correct, what is the obvious duty of the officers of our association—the servants of the fraternity? Give them the food they hunger for, come for, and need; or compel them to take food too strong for most of them, distasteful to many, and relished but by few?

The ideal convention would present to the anxious looker-on the great picture-producers, but no convention has as yet done it; and if conventions in the future meet with as little encouragement as those have in the past in their endeavors to get the great lights to give actual demonstration of their abilities, the record will be meagre enough.

The trouble seems to be that the working photographer does not care for the carefully wrought-out theories of scientific workers, and cannot get the services of the practical leaders.

Half a loaf is better than nothing, and we must not be too critical of its quality. Fine workmen are much more plentiful than they were once, big-hearted and big-brained are some of

them, and in some convention we will, I trust, see the best men in the profession helping their brethren over the rough places.

The thing, then, is for each man and member to do his mite, in the way of exhibit and talk, to help roll up an aggregate of small but useful things that will make a mountain of valuable information to the earnest ones who have come for it.

The strongest and richest mental pabulum will be provided at our coming convention possible to obtain; that it will be rich in choice exhibits is also true; but what is most wanted is even more evidence of that good-fellowship, that hand-to-hand spontaneity of feeling, so handsomely displayed at our last meeting.

As a sort of practical addenda to these somewhat disjointed reflections, let me say that many good dry-plates will be saved, and the feelings of many dry-plate makers soothed, if the directions for the use of their plates are read a little more carefully and followed closely. I will give an exceedingly good developer, but will begin it by saying that, by commencing any plate with a weak developer, using only half the iron at the start, and a few drops of bromide, many a plate will give a good negative that would otherwise be ruined.

Developer.

No. 1.—Neutral Oxalate of Potash,	. . . . .	1 pound.
Water,	. . . . .	5 pints.

Make decidedly acid with citric.

No. 2.—Iron,	. . . . .	1 pound.
Water,	. . . . .	2 quarts.

Filter, and add 60 drops of sulphuric acid.

To develop, take—

No. 1.—Oxalate Solution,	. . . . .	4 ounces.
No. 2.—Iron,	. . . . .	4 drachms.

Always have ready a bottle of

Water,	. . . . .	10 ounces.
Bromide of Ammonium,	. . . . .	300 grains.

If more intensity is needed, add 10 drops of bromide solution, and continue the development.

Image should show through on the back of the plate. An

over-exposed plate needs weaker developer, and more bromide solution. An under-exposed plate needs a stronger developer, and less bromide solution. Carry the development until the image is well sunken in; don't try to hurry.

(Written for Photographic Mosaics.)

BUSINESS versus BUSINESS.

BY H. S. KELLER.



WHAT shall I write that will be of interest to the readers of this little book? What shall I say that has never been before said? Or, shall I remodel some one else's sayings? As I sit here, I hear a voice ask the proprietor of my gallery, "How is business?"

"Business is good; I have no reason to complain."

"Strange; my business is gradually growing poor. Why, the last six months has just about sickened me of the picture business."

"By the way, where are your prices now?" asked the genial gentleman, who flirts the baby charmer so successfully.

"I'm making cabinets for three dollars per dozen."

"And you dropped to that figure just how long ago?"

"Six months."

"Your trade was brisk for the first two or three months; am I right?"

"You are; I was obliged to hire extra help. It seemed as though everybody in the city wanted pictures. We were busy day and night trying to keep up with the orders, but—"

"Well what?"

"After a spell trade grew duller and duller; now it is miserable. I told two of my hands that I could no longer keep them."

"I can tell you the reason of the change. Perhaps give you a hint how to regain some of your vanished business."

"Do so. I would be particularly pleased."

"Your work and prices were on a level with mine some six months ago. Your trade grew dull, and you become, excuse

me, selfish. You thought I had a little the best trade. I did not. My trade was dull at that time, the same as yours. You dropped on your prices. The consequence was, you were pushed with business. *Now*, the market is glutted, so to speak. My patrons still come and go with regularity, and I get good prices. You have overfed yours, for when the prices were lowered they came in a rush. You must know that there is such a thing as a surfeit of pictures. You experience the evils of *that*. There is a remedy."

"What?"

"Come back to the old prices. It will be hard work, but a burnt child *must* learn to avoid the fire."

"I'll try it."

Then the conversation ceased, and the caller went out. He has a stern task before him. Whether or no he will triumph, remains to be seen. One man makes a business to destroy a business. "The turtle beat the hare." That old fable is one which many picture-makers could take to heart.

(Written for *Photographic Mosaics*.)

SIMPLE THINGS, BY A SIMPLE MAN.

BY O. PIERRE HAVENS.

HAVING occasion to go into my friend MOTE's gallery, of Atlanta, I was surprised at the very simple manner of his working dry plates. And taking advantage of his kindness, I think it would be of benefit to the "simple" to tell of his method of development made while the subject is there. The light for the dark-room was exactly the same as when working wet plates; two thicknesses of photographic dark-room glass. By laying a small strip of paper in the trough of his Bonanza-holder, he used the same holder; then placing the plate in a dish of old developer, he placed a backing-board over the dish, and let "her soften-up," and get in good condition for a little fresh developer; and in half the cases the old developer will develop enough. Work the plate, or dish rather, once in awhile, put a new plate in your holder, look at your negative again, and

by this time you can tell if the subject was still ; if so, set your next subject, and then the negative is ready for the hypo and alum, in one solution. Set it to fixing ; if you find the negative, upon looking at it out in the light, is not fixed, put it back until it is fixed ; for I have lost some valuable negatives by being made to believe that if a plate was improperly fixed upon looking at it in the light, it could not be fixed any more. I have fixed negatives after they had been placed in the tank, in the light, intending to throw them away, but afterward changing my mind. And I have, and can yet develop a dry plate under the sky-light, provided from half to three-quarters of an inch of developer is on the plate, and the plate placed in it in the dark-room. I never pour developer on a dry plate, but prefer placing the plate in the solution, and using very little motion of the solution while developing. And that gives me time to do other things ; while if I wish to step out of the dark-room, I place a board over the developing dish. I have no difficulty or trouble. I never intensify or reduce, as either, in my opinion, spoils the negative in a few months.

Don't expect the development to be rapid ; one second exposure on a child is enough. Though the negative looks thin, it will print much stronger than you have the least idea of. Keep your hand off the back of the plate at all times. Brush every plate off well before placing in the holder. Save and filter all your old developer, to prepare your negatives for final development with new. Don't add all your iron to the developer at once, as you can add the balance if needed, but can't take it out if too much. Usually half the quantity of iron will do, if using oxalate developer. Place your plate carefully in the holder, and pull out the slide easily, without any jar (having covered the instrument and holder with your common cloth) ; put in the slide square, and not one corner first ; and let simple sense follow "simple thing," and you must succeed.

THE ferrous oxide developer is used by most of the Parisian photographers in their emulsion work.

(Translated for *Photographic Mosaics*, from DR. JOSEF MARIA EDER'S
"Complete Manual of Photography.")

SELECTION OF OBJECTIVES.

A.—FOR PORTRAITS.

THE photographer who makes the portraiture branch his chief business requires several objectives. Especially one for cartes-de-visite, cabinet pictures, and larger styles—viz., so-called whole plates and pictures of 30 x 40 cm. The selection of the objectives depends upon the length of the studio. For portraits, the distance will fluctuate between 3.7 to 7.3 m. At a shorter distance the pictures show an exaggerated perspective and an unequal rate of clearness. At a greater distance the pictures lack in plastic and relieve. The distance at which the objective is placed is generally 5 to 6 m. With PETZVAL portrait objectives their focal distance must be about twice the length of the side of the picture desired. For cartes-de-visite a common PETZVAL's portrait objective, which at present still leads all other objectives of about 7 cm. diameter, and 20 cm. focal distance measured from the back lens. In this instance a distance of the model from the apparatus of about 5½ m., suffices for even a full figure.

An objective of about 8 cm. aperture, and 24 cm. focal distance is better adapted for more pretentious work, and requires to be placed at a distance of 8 m. An objective of the same aperture, and 29 cm. focal distance, produces in case of need even a cabinet picture, but has less strength of light, and requires a studio of 8 m. length. Furthermore, the opticians construct so-called rapid workers which are used in photographing children, etc., and which have an abnormally short focal distance, and obtain their strength of light to the detriment of the sharpness around the margin, and the depth; which is the reason that such instruments are not in general use.

For cabinet pictures an objective of an aperture of about 8 to 9 cm., and a focal distance of 30 cm. is required, and the picture of a full figure is obtained at a distance of 6 m. Better adapted

for cabinet pictures are objectives, somewhat larger, of an aperture of 10 cm. and a focal distance of 38–48 cm., the length of the studio must be $7\frac{1}{2}$ –9 m. If the studio is of the requisite length, objectives of a somewhat larger kind are selected, because they work deeper, owing to their greater focal distance; as cheap objectives of less strength of light serve smaller lenses with proportionally long focal distance.

The special objectives which serve expressly for photographing standing figures, as well as the objectives constructed for an especially even (flat) picture-surface (for "promenade style," etc.), have for the main aim to show head, hands, and feet of the figure clear without the introduction of small stops. To that purpose the field of view is considerably restricted, and the image towards the margin less minute than with common portrait lenses, which are in the main used for pictures showing the figure down to the knee. This is the reason that the former are often so constructed that even with the use of stops they do not give satisfactory clearness upon the whole surface, and therefore a common portrait objective is more adapted for enlargements. A "full plate" requires an objective of a diameter of 10 cm. and 30 cm. focal distance; for the whole picture a distance of 6 m. is necessary. For a picture size, 27 x 35 cm., a portrait-objective of an aperture of 15 cm. and focal distance of 45–60 cm. is generally chosen.

In consideration of the high prices of such portrait objectives, with such large lenses, the employment of euryscopes, anti-planats, or similar constructions, is in many cases preferable, especially when the studio is short. Of course, the latter two have somewhat less strength of light than the former, but this difference is of less importance since the introduction of the bromide of silver process, as they are much cheaper, and serve just as well as portrait objectives of PETZVAL's construction; the former gain favor very quick. For photographing in the open air, objectives of less strength of light, as the euryscope, and under favorable conditions of light, common aplanatic lenses even may serve. With the high degree of sensitiveness of the bromide of silver gelatine, we are enabled to take portrait photographs with lenses, which formerly were accounted of little

use for that purpose, as, for instance, the common landscape lens, the orthoscope, etc.

To produce large pictures it is customary to take lenses of large diameter. Such a bust picture in life size, taken direct in the camera, was exhibited, for instance, at the International Exhibition at Paris, 1862, by DARLOT. But this is not always to be recommended, because large objectives are difficult of construction and very dear in price, and it was therefore a long time ago declared, for instance, W. ROSS in New York, 1857 (see H. W. VOGEL's "The Photography at the International Exhibition in London," 1863, page 12), to be expedient to make small pictures direct in the camera, and from them, afterwards, enlargements.

B.—FOR GROUPS.

The photographing of groups requires an instrument of about the same strength of light as the portrait apparatus, but of more extended visual angle and of considerable depth. Of the common portrait double-objectives (PETZVAL's construction), only instruments of large aperture and long focal distance are adapted for photographing groups; so-called rapid workers do not fill those conditions. The objectives for groups work somewhat slower; for such a purpose, objectives of an aperture of 13 cm, a focal distance of 62 cm, and size of plate 47 x 40 cm are selected. As the long focal distance of such objectives demands a long studio, the orthoscope, or of late, the group-antiplanate, the euryscope or rapid-rectilinear, which give the same size of picture with a shorter focal distance, while being cheaper, are oftener chosen; with good light, especially in the open air, they have sufficient strength of light even for the wet collodion process.

C.—FOR REPRODUCTIONS.

For the reproduction of drawings, diagrams, etc., the aplanatic lens, the euryscope—rectilinear, triplex, etc., are specially adapted. For very large sizes, STEINHEIL's wide-angle aplanatic lens is especially to be recommended, particularly when it is intended to fix on a reversing prism. This instrument was first brought into use for this special purpose, for large maps, at the

Military Geographical Institute at Vienna. Generally speaking, however, the photographer usually selects one of the three first named, which have so much strength of light that with larger stops they can also be used for group-photographing. When exclusively maps are to be reproduced, the wide-angle aplanatic lens is preferable. The pantascope, also the triplet, the globe lens, and, if not too much is expected, the orthoscope, work equally well.

D.—FOR ARCHITECTURE.

For larger architectural pictures, a correct drawing of the objective is indispensable; and for this purpose the correctly drawing objectives, mentioned in C, as well as all correctly drawing landscape objectives are adopted. It is to be remembered, that when the distance of the objective from the model is very short, the focal distance must be very short, in which case so-called wide-angle lenses (wide-angle aplanatic lens) must be used.

E.—FOR LANDSCAPES.

In order to make a judicious selection from the numerous landscape objectives, it is necessary to clearly understand the following points:

1. The size of the picture.
2. The visual angle, or the extension, of the object to be compassed.
3. The nature of the picture, whether it is only landscape, or an architectural picture, or both.

For common landscapes, the wide-angle double objectives are not to be recommended, because they exaggerate the perspective apparently to such an extent that the landscape is often not recognizable in the picture; and such lenses ought to be employed in landscaping only when a slight curvature of the lines along the margin of the picture is annoying; or when no sufficient distance for placing the objective is to be obtained; or when panoramas are to be obtained. For landscaping, the single lens is recommended by the most eminent landscape photographers, because it makes very brilliant pictures, and possesses sufficient strength of light (more than many wide-angle

double objectives) to make, even with a very small stop, a fully worked-out negative upon bromide of silver gelatine in a few seconds.

It works deeper than a stopped-off portrait objective. The only drawback is a slight curvature of the lines, which becomes visible when objects bounded by straight lines (for instance, buildings) are visible at the margin of the picture; the latter may be avoided by bringing the buildings in the centre of the picture. Of special merit is DALLMEYER's single landscape lens; DALLMEYER himself preferring it to his aplanatic double-objectives for the above purpose.

For architectural pictures, etc., the aplanatic, rectilinear, etc., is preferable. For panoramas, the common simple landscape lens (except DALLMEYER's simple wide-angle lens) is not so well adapted; for that purpose the wide-angle lenses serve, especially STEINHEIL's wide-angle landscape aplanatic lens. The latter is also useful when it is desired to obtain, at short distance, an extended picture of the landscape upon a plate of stated size; this is owing to the short focal distance. For common use, the landscape aplanatic lens is to be recommended, because it has more strength of light than the former, and does not bring so much of the often disturbing foreground into the picture. On the other side, there is no handier or cheaper instrument than the single lens, when it is sought to obtain a large picture of a distant object. Other lenses, of correspondingly long focal distances, which draw an object just as large, are materially dearer.

In order to obtain one and the same object in different sizes upon the ground glass, without changing the situation of the apparatus, it is well for the photographer to provide himself with lenses of different focal distance; either with several single lenses of different focal distance, or with a set of landscape aplanatic lenses, or with a "universal instrument." For landscaping with moving scenery the objectives mentioned (F.), are to be selected; or, with good light, the aplanatic lens, the euryscope, rectilinear, or orthoscope. If it is desired to work with triplets, globe-lenses, or pantoscopes, in the open air, care is to be taken to determine whether they do not have a ghost in the centre of the picture, which often is the case.

F.—FOR INSTANTANEOUS PICTURES.

For instantaneous pictures of moving scenery in the open air, in most cases PETZVAL's portrait objective is employed, and in this case it ought to be worked with larger objectives (from 7-8 cm. diameter)—in case sufficient distance to place the apparatus is obtainable—because these instruments have as much strength of light, while possessing greater depth. Unfortunately, the serviceable angle, which the portrait lenses compass, is very small; the sharpness of the picture decreases rapidly towards the margin. Very meritorious are STEINHEIL's group lenses—aplanatic lens, as well as euryscope, or rapid-rectilinear, as they give, with short focal distance, a sharp, uniformly light picture upon a large surface. The strength of light is, nevertheless, so great that it is only very little behind the portrait objective, and instantaneous pictures can easily be made upon bromide of silver plates with good illuminating sunlight, as, for instance, OBERNETTER, in Munich, has often done. As they draw a picture sharper and deeper than the PETZVAL objective, they are, under certain circumstances, preferable even to the latter. DALLMEYER's single landscape lens also makes good instantaneous pictures. Less adapted for this purpose, the writer holds to be the old single landscape lens, recommended in the *British Journal of Photography*. The same makes well-drawn pictures with a stop aperture equal $\frac{1}{12}$ to $\frac{1}{16}$ the focal distance; the size of the pictures is then $\frac{1}{3}$ of the focal distance in the square. Of course, these lenses never give the minutely sharp drawing of the antiplanatic lens. As leading guides in selecting objectives for instantaneous pictures, are to be mentioned: Instantaneous pictures can only be made with objectives of short focus. It is not well to obtain instantaneous pictures by employing objectives of larger focal distance, it is much better to take the instantaneous picture with a proportionately small antiplanatic lens (43 mm. aperture); a small picture can be obtained sharp, even with large stop aperture. The small picture may then be enlarged with a portrait antiplanatic lens.

(Written for *Photographic Mosaics*.)

PHOTOGRAPHY AND PLUCK.

BY H. MULLER.

UHE more some people are opposed the more energetic and successful they become. Such was the case with Madame SERENA the distinguished authoress whose volume of travels is exceedingly acceptable to readers in Europe, especially in France. What Madame SERENA did last winter shows what any enterprising individual may do, man or woman, if they want to accomplish certain results which they have in their mind. The following is the account which I found in a foreign newspaper, and which I send as my contribution to *Mosaics*, and as an evidence of what may be done when there is a will to do it. I believe it may inspire others to take a lot of emulsion plates and gather something for the good of the world.

Madame SERENA performed a grand feat this autumn and early winter. She had been at the geographical congress at Venice, and was at Vienna *en route* to her London home. While at Vienna she received a letter from the persons she had employed to take photographs for one of her books on the Caucasus; these men refused to go into the Abkasee country, because of certain news they had received; the people of that province are in a chronic state of insurrection against Russia; therefore there was danger of loss of life, the photographers thought. At the same time HACHETTE, the Paris publisher, wrote her that he could not publish the book on Persia without the illustrations. The intrepid, energetic woman went instantly to a photographer, took only three lessons of him, made him provide her with the necessary materials; then she started for the Caucasus on the 16th October, 1881, to take her own photographs. The 12th December, 1881, a little less than two months after, she returned to Vienna with 150 views which she had taken with her own hands. When she left Vienna in October she proceeded direct to Tiflis. When she arrived there, before beginning her journey into the Abkasee, as she was naturally anxious about her ability in photographing, she photographed a ship that was lying in the

harbor. Then she took the negative to the Tiflis photographer to have it tried. Her delight was beyond expression when she found she had succeeded. It is extremely interesting to hear Madame SERENA describe the scene at the photographer's, how she stood, breathless, watching the result of her negative, and with what rapture she saw the ship stand out sharp and clear in the picture. Then she left Tiflis and continued her journey. She was a month going from and returning to Tiflis. The journey on horseback to Abkasee and Samarnzakhan occupied three weeks. Every night after the fatigue of the day's journey she was obliged to give two hours to arranging in proper order the result of her day's work. The negatives were glass covered with gelatine; if a ray of light touches the glass, it is well known that these gelatine impressions are ruined. Thus she shut herself up in her tent, lighted a red lantern and packed away carefully all the negatives which she had taken during the day; then she made her notes of each picture in a book prepared for the purpose, according to its number, so as to be able to identify each one when she arrived at Vienna. It was not until she reached Vienna in December that she knew whether she had succeeded or not; but luckily she had; every negative turned out a complete and perfect picture, some of landscapes, some of the inhabitants, some of animals, etc.; for these photographs will be of use to the naturalist as well as to the general readers of her books. Madame SERENA is a small delicate woman; a brunette with brilliant eyes, a large head and remarkably intelligent face. She has a quick, light step and a very erect figure. She talks fluently and well, and is said to lecture with much effect upon the subject of her numerous journeys. She speaks several languages, and is very picturesque in her descriptions. Her husband is a man of easy means. She began travelling some years ago for health; now it has become a passion.

"SILVER Threads among the Gold" is the title of a very beautiful piece of music, and must have been suggested by some photographer of feeling.

(Written for Photographic Mosaics.)

DO YOUR BEST.

BY MRS. E. N. LOCKWOOD.

DO *your best!* Nothing was ever gained by slighting anything you attempted; for whatever is worth doing at all is worth doing well.

You may be hurried or wearied with your work, or something may have gone wrong in the day's labors to make you feel almost discouraged—when, in comes a customer for a sitting. You feel almost angry that they should dare enter your precincts, and the impulse is, not to care whether you do your best or not, if you only get their money, and get rid of them quickly. But, if you fail of doing your work as well as usual, or treat your customers as inward ill-nature is apt to do, under such circumstances, you injure yourself mentally as well as financially; and lose one whom you might have made a lasting friend and patron.

I find this phase of life in every department of business pursuits; and those who succeed are the ones who have learned to *do their best*, at all times and under all circumstances, letting nothing turn them from their fixed purpose of doing right, and being conscientious in their work, from the smallest to the largest and most important part. You may be only an apprentice, just beginning in your art-work, having all the drudgery—as it seems to you—to do, and you “hate it, and, in consequence, slight it. Your paper is so carelessly silvered, much has to be thrown away; your glass, also, so poorly prepared, the negatives lose brilliancy and strength. Your workroom is all “upside down,” and littered-up, lacking order in every corner; and you feel just like your room, every time you enter it, not knowing why. Look within yourself, and see if the fault is not there; and then, at once, make up your mind and determine to *do your best by yourself*. Search the inner garden of your life—your thoughts; pull out every weed, and give only that which will bring some good to you, or those you labor for, a chance to thrive; and you will soon be surprised at your progress, and the confidence and respect you will acquire from everyone with

whom you come in contact. Try it, young men; try it, young ladies (and even the older ones are not past reformation); and you will never regret the result.

(Written for *Photographic Mosaics*.)

DOES IT PAY?

BY S. D. WAGER.



WE often hear photographers say, it don't pay to subscribe for the journals and other publications pertaining to photography, and that it don't pay to spend twenty-five, fifty, or one hundred dollars, besides losing the time to attend the meetings of the Association. Now, let us see if it don't pay.

At the convention held in New York, in 1881, there was present a young photographer from a city a long way from New York. It was the first meeting of the Association he had ever attended. He had never seen a dry plate; but after seeing the negatives made on them, and the beautiful prints from them, he became enthused, and when he went home he took samples of plates with him, besides a large quantity of publications; he also subscribed for the journals. In less than six months, by hard work and study, he had so far improved the quality of his pictures that he felt justified in raising the prices of his work. The result of which was, he had a fine collection of his "best" on exhibition at the meeting of the Association in Indianapolis, in 1882; and instead of leaving two employ  s in his gallery, as he did in 1881, he left eight, besides having had to enlarge his premises.


Another case. A photographer went to Indianapolis to attend the convention; as he was about to pass into the hall, he was asked to show his badge—he had none; he was told it would cost him two dollars if a proprietor, and one dollar if an employ  , and then he could have free access to the hall and all the meetings of the Association. He thought it would not pay, and turned and left the hall, and went home no wiser than when he came; and is, to-day, in the same old rut he was in ten years

ago. Now, which of the two was the better paid?—the one that spent some money and became enlightened in regard to progress and development of photography, or the man who *thought* he could not afford to spend a few dollars to gain some knowledge of his business? I say it pays any one to keep up with the times in photography, and to do so, he must read everything he can get hold of that treats on the subject, and attend the meetings of the Association, and exchange ideas with his brother artists; and he will find it pays.

(Written for *Photographic Mosaics*.)

OUR PRICES.

BY W. J. HILLMAN.

HILE at the convention, I had a conversation with a number of the fraternity in regard to prices, and was surprised to learn that they charged no more for groups than for single persons. Now, are we doing ourselves, or our customers, justice by carrying on the business in this way? Is it right to charge a customer the same for single pictures that we would charge for groups? All tradesmen charge according to the amount of work done. Why should not we? Will a doctor deal out his medicine and advice for a whole family for the same fee that he would charge a single member? Will the farmer sell you a cow and *throw in* the calf, or will his wife sell you thirteen eggs for twelve and call them a dozen? Ask any of them to do this, and they will soon tell you that they are not getting up that kind of *groups*. Now, why not have a list of prices according to the work we do, for instance, ferrotypes, two pictures of a single person for fifty cents, and ten cents for each person added. Photographs three dollars per dozen, and fifty cents for each person added. These rates would be fair for all persons concerned, and I think *we* would see quite a difference in our receipts at the end of the month.

Let us look at the matter a little closer. Four persons come in and want group pictures; your regular charge would be one dollar; now, for each two pictures made, add ten cents for each

person in the group, which makes each two pictures eighty cents, or four for one dollar and sixty cents, forty cents each, quite a difference compared with the old way; or, supposing, as you charge more for groups, they conclude to have them taken single (and in this way get better pictures), you get up sixteen pictures instead of four, you get four dollars instead of one dollar.

The difference is enough to make any of us "smile" a little, especially as we see visions of a happy family returning home from a six weeks' visit among friends, who otherwise would have had to stay at home; or of a fair prospect of attendance at the next convention from the increase in our receipts.

Then spunk up, brother; charge for the work you do, live as other men live, and be happy. Here is a little dodge which I have never seen in print, and came to me in this wise: Having a bottle black from nitrate of silver solution, I wondered how I should clean it. I poured a strong solution of cyanide of potassium into the bottle, shook, let stand a few minutes, poured the solution out, rinsed three times in clear water, and had a bottle as clear as when new. If this is of any use to any one, I have partly paid the large debt I owe the fraternity.

(Written for Photographic Mosaics.)

HOW TO SAVE OLD FERRO-PLATES.

BY H. M. BEELES.



AS soon as you find that you have made a failure, throw the plates into a tub of clean water, and let them remain until after your customers are gone; then take them out, one by one, and rub off the films. Now, have a bowl of albumen, and a swab, made by tying a piece of canton-flannel over a thin piece of wood (picture backing is best), about two inches wide; take this and dip it in the albumen, then go over the surface of the plate carefully, and wash under the tap, and then flow with clean albumen solution, and allow the surplus to flow into your bowl of albumen to use for the preliminary coating of the next plate.

The object of the first coating is to remove all greasiness, and

thus allow the water to thoroughly wash the plate. The second application has the same effect as on glass, viz., to make the film adhere.

Plates thus prepared are superior to new ones.

NOTE.—A little sal soda in the water into which you throw your plates will make the films come off more readily.

(Written for Photographic Mosaics.)

TABLETS versus NOTE-BOOK.

BY R. E. WOOD.

A MEMORANDUM of subjects and exposures of dry plates is a good thing to have, and it is a pleasant thing, and saves time to so arrange this, that when the plate-holder is taken up, the memorandum is before the eye. This may be done by taking the centre-piece of a common fine comb, or other thin piece of bone or ivory, bevel its edges, cut a suitable dovetail slot in the side of the plate-holder, and insert. With a pencil make on this the desired notes, and there is then no need of fumbling over book-leaves before developing.

NO MORE ELASTIC.—The elastic of the diaphragm in the stereo camera breaks so easily and often that it becomes a nuisance, particularly if one is out on the hills with no extra supply. So simple a thing as this it seems a wonder the manufacturers do not make it more substantial. A little telescoping tube on either side of the diaphragm would be an admirable arrangement, and add perhaps five cents to the cost. Another arrangement of equally small cost, I will describe, can be put on by any one; it took about fifteen minutes to fit it to my camera. Four pieces of sheet metal, four and one-half inches long, one-fourth inch wide, two pieces two and a half inches long, same width; punch small hole in each end of each piece; now, with small No. 12 tinner's rivets, fasten one of the longer pieces to either end of one of the short pieces; now with small screws fasten the outer ends to the wooden bars on either end of the diaphragm, one on each side, and the thing is complete and permanent.

(Written for Photographic Mosaics.)

MY EXPERIENCE WITH GELATINE BROMIDE.

BY EDWARD H. FOX.

TWENTY-FOUR grammes of potassium bromide (I work by the metric system, and I advise all photographers who like convenience to get weights and graduates at once) are dissolved in 10½ ounces or 600 cc. of water obtained by melting ice, and 45 grammes of CARL SIEMAN'S Swiss gelatine are added and swelled for about twenty minutes. When the above is swelling, 30 grammes of silver nitrate are dissolved in 600 cc. water, same as above, and stronger water of ammonia is added, drop by drop, stirring all the while : it will turn to a deep, muddy brown. Keep adding ammonia drop by drop until the solution clears up, which it will do in a few minutes. Now the gelatine containing the bromide is dissolved in water heated to 40° C., 104° Fahr. The silver solution may be heated the same, but it is not absolutely necessary. When the gelatine is dissolved the two are taken in the dark-room, the gelatine is poured into a quart stone ink bottle, and the silver is added about a third at a time, and well shaken. This is important ; shake and shake until you think you have shaken too much, and then shake again. Now add another third and shake again, and so on until all the silver is added ; the water-bath is now cooled down to 35° C., 95° Fahr., and the ink bottle, well stopped, is placed in it for from a half to one hour, and the water is allowed to cool down as much as 25° C., 89° Fahr. ; but it must not be allowed to go lower than 20° C., 77° Fahr. The emulsion is now taken into the dark-room (I have one specially for washing the emulsions and coating the plates), and poured into a soup plate, with ice placed around it for about twenty minutes or until set. It is now squeezed through darning-net into a bowl of well or spring water, and stirred well. Now right here is the secret of rapidity ; the washing has a great influence over the quality of the emulsion. If you wash a little, your negative will be of a dirty yellow color, and will be harsh ; but if you wash over your

negatives, they will be soft and full of detail, and of that beautiful grayish color, approaching very near unto a wet-plate negative, and your plates will be extremely rapid. I used some to-day with a drop-shutter, working in about the twentieth of a second, with a 4 x 4 Darlet portrait lens, full aperture, about eleven o'clock, and I found them all over-timed. I was using them on a light bay stallion in good sunshine.

For coating plates I have a large marble slab 4 feet by 2, with a zinc pan same size. About half an hour before I commence coating, I put crushed ice about an inch in thickness in the pan, and set it on the marble slab. When you coat the plates and lay them on the slab, they will set in five minutes; I then set them up on racks about an inch apart, and place them in the drying-box and fill up the slab again.

I use a silver tablespoon holding 6 drachms; one spoonful for a 4 x 4, a little more for 8 x 10, and a little less for a 5 x 8.

The back of the spoon is the best thing to spread it with. I have a drying-box with shelves that fit close on alternating sides, so the air will have to pass over each shelf to get to the outlet, which is a pipe running into a flue; but I find that setting the plates on the table in the coating-room is just as good as a drying-box, or better. It is best to coat small plates for the following reasons: If an 8 x 10 plate is curved, if it is cut into two 5 x 8, the curvature is diminished one-half, and you will get a much more even film than if you cut it after coating. I pick out the straightest glass for large plates, and cut up all that is curved for smaller plates.

In the above process good washing is essential, for there is a considerable excess of soluble bromide that must be got rid of. If 35 grammes of silver were used instead of 30, an emulsion would be made that would require but little washing, as 1.427 grains of silver will combine with one grain of bromide, and be evenly balanced, and leave nothing to be washed away; but there is danger of fog unless extra care be used; and the mode of preparing with excess of bromide and washing thoroughly is much the safest.

Let those who want a quick collodion try *celloidin*.

If you have a strong negative, print on MORGAN'S deep pink paper; and for a weak negative, print on GENNERT'S Eagle brand.

(Written for Photographic Mosaics.)

THE AMATEUR AND THE PROFESSIONAL.

BY M. H. ALBEE.

DO not despond because there is an army of amateurs coming on the scene through the advent of the dry plate. Everybody is not going to turn photographer, as they have not the means, neither the time, nor the inclination. At first I thought they were going to swoop down on us, and leave us without an occupation; but I think we shall not be very much hurt, only that we shall be obliged to produce better work and thereby gain a better price, for who is so willing to give an equivalent as he that has knowledge of the worth of a thing?

It will be much as it is music; some are called singers and others artists; almost every one can sing, but it is not every one who can soar above the multitude and be a lone star, beckoning others to follow to the heights if they too would excel. And so through all things, some will know more than the oldest daguerrotyper, who has passed through all the stages from first to last. But the great majority of these amateurs will see the greater skill of professionals, and thereby put us on a higher footing, if we do not degrade the art by slipshod work. Woe to him who does such when the amateur gets hold of his results, for it will be talked in the fashionable circle and in the quiet home, where an amateur's outfit stands as the emblem of knowledge to substantiate his position, while on the centre-table lie the results of his judgment.

It will prove to the world who are the artists in the profession, and who are the thoughtless ones, although some are so covered up with their employer's name that they are not known. Yet after a time they will have so outgrown their swaddling-clothes as to be free and assume a place which rightly belongs to them.

The successful photographer is he who can make the most of others' abilities; so regulate himself as to encourage patronage; not independent until he has got where independence can be sustained. He also learns not to attempt any fancy lightings or

suggestions of a poetic nature, when his subject has no qualities fitted for the expression of the same, but contents himself with securing a portrait and good chemical effects. He does not attempt the impossibilities, but so talks to his subject that they coincide with him, and let him do as his judgment dictates; for who should know, if he does not? He is usually seen at all public gatherings in his immediate vicinity, and prominent in some way connected with them. He is a church-going man, and his pew is not empty.

He is one who discerns the popular taste, and bestirs himself to meet the emergency.

He does not follow out his own inclination so much as the demands of the public, and being good at feeling the pulse of trade, prescribes the very remedy to prevent a disaster.

He selects a convenient place, a busy thoroughfare, and, like the successful druggist, is right where you want him.

He is at his post when all the others have left looking after things, to keep his employes at work when at their stations; in fact, he is an ever-present person, with all the ribbons in his hands, driving at a rate only known to the American.

This is a fancy sketch made mostly from observation, and is what constitutes the real business man, who seldom lets an opportunity slip to turn all things to gold, and which is a successful way financially.

Many a man has secured a name which through his own individual effort he could not attain. So do not disdain any aids that will contribute to that end, even if your nature repels such ways of doing, for success is very materially advanced by such means, and if you neglect them, when old age comes on, and you look back and compare the career of a successful man, you will see he has profited by others' skill as well as his own.

Of course, you must have means to secure all these advantages, unless you are a bold spirit; so look out for the needful if you can do so by honorable means; if not, it is far better to have little than much.

Now, what I want you younger ones just entering on life's duties to do is, not to slide along without thought or aim until circumstances wake you up to a knowledge of the fact that old


age brings burdens unthought of in youth. Choose while young the path you feel is your chosen route, and keep to it, ever contrasting the two opposites, riches and poverty, or the improvement of self and uncultivated taste; and keep to the one you like best, otherwise you will learn to contrast it when the golden opportunity is gone, and you cannot mould again the structure you have erected. Remember to accumulate wealth solely; for wealth you have got to sacrifice your better feelings, and to follow the bent of your inclinations; if it be art, you have got some hard rubs to contend against. It is my desire that you combine the two, the love of art and that of getting money, if you can do it without sacrificing too much. If you have business qualities about you, seek to be the successful photographer, and manipulate others' abilities to your own good; if not, avoid having others to look after; take care of yourself, and then you will have no one to fret at but yourself, and less money to handle with less trouble to yourself, and you may die a happy old man. For as Fanny Driscoll says:

"Work is the divine refuge of the rich and poor,
Oh, ones uncomforted and sad of heart:
This is your tower of strength through all the days;
Take it, and hold it sacred as lost art."

(Written for Photographic Mosaics.)

MY WAY—NOT NEW, BUT GOOD.

BY A. W. CADMAN.

 AFTER a struggle of months, trying to work the dry plates, I am working them exclusively now. In the first place I dispensed with the ruby light, quit feeling for things, put some orange tissue-paper on a frame, and covered a large south window with six thicknesses; now I see what I am doing.

For developing, I prefer the oxalate, 80 grains to the ounce; iron, 100 grains to the ounce. Use it from one to three, to one to seven—as needed to suit the time.

For fixing, 2 ounces of alum dissolved in 2 quarts of water, and

half a pound of hyposulphite of sodium added; and when settled decant for use.

And when you have a negative made your fingers are clean, and you feel as though you had done something to feel proud of. And if the negative is soaked about ten or fifteen minutes, and washed well after, it will remain good, even should you strengthen with a solution of mercury, followed with one of ammonia. But if developed properly with the timing, you need not use any strengthener.

I have used CRAMER & NORDEN and EASTMAN plates with equal success. My advice is for all wet-plate workers to try the dry for comfort and satisfaction. Then ask good prices, and be happy in helping your brother, even though he should be making pictures in your town.

If any one should get a new thought from the foregoing, I am satisfied.

(Written for Photographic Mosaics.)

HEALTH.

BY C. J. BILLINGHURST.

HEALTH is the first requisite to success in any business or profession, and every one should know something of the human system and the laws that govern it. Those who are obliged to use poisons, should do so carefully and understandingly. Everything of a poisonous nature should be kept tightly corked when not in use. Those who use cyanide of potassium should have a glass bath and dipper, such as are used for the negative bath. The box might be made with a glass front, so the picture might be examined while in the solution, and the box should be tightly closed when not using. But why use cyanide when it can be dispensed with? I have not used over an ounce in twenty years, and then only to compare results. I cannot see that it is any better for fixing negatives or ferrotypes than hyposulphite of sodium, only that it works quicker and is more easily washed out. But why sacrifice health to time or

money? When health is gone, we would give almost anything to have it restored.

Some persons are very reckless in the use of cyanide to remove stains from the hands, and whenever it comes in contact with the skin a portion of it is absorbed into the system. I never use it for that purpose; with a little care many stains might be avoided.

Cyanide is very useful in its place, but it is often used when it might as well be dispensed with.

(Written for Photographic Mosaics.)

PRINTING ON PLAIN PAPER.


BY JOHN R. CLEMONS.

PERHAPS you will think it strange in me advocating the use of plain paper. Not that I am going to cast aside the use of albumen paper altogether, as it has its place in small prints and up to an 8 x 10; above that, and when photographs are to be framed, then the plain print by rights should have its place. Take a good plain print and frame it, and it will be almost impossible to tell it from an albumen print; and if it is not good, you can make it good under the brush either in color or ink. No copy should be made on albumen paper, especially if the original be much marred. In double printing in a background it excels. It can be readily matched with a little care, and be strengthened up in all its weak points. There is another point in its favor—its durability and its easy working qualities. It requires two-thirds less gold in the toning than albumen, and can be silvered by swabbing the silver on, especially when very large sheets are to be used.

The ammonium nitrate of silver is preferable, for when the paper is dry it is ready for the printing-frame. The prints should be washed before toning, and can be toned to resemble ink-work by using a small portion of sulphate of sodium (Glauber salts) in the toning solution. Photographers are gradually coming around in its use, as there are at least five reams used now to where there was one five years ago, especially for large prints,

*(Written for Photographic Mosaics.)***HOW TO SAVE THE IRON TRAYS.**


BY GEORGE PINE.

 **N**E little thing just occurs to me which may be a benefit to others. I find many are condemning and throwing away their japanned iron developing trays because they soon rust and become useless. If those who use trays of this description will give them an occasional coat of good thick asphaltum varnish, they will last indefinitely, and not contaminate the developer. Old trays that have rusted out and been laid aside may be restored to usefulness in this way.

Possibly the above has been published before and escaped my notice; but I know it is not generally known, as I hear many complaints about trays rusting so soon, and many have been compelled to discard them for porcelain.

*(Written for Photographic Mosaics.)***THOUGHTS FROM MY PRINTING-ROOM.**

BY J. H. REUVERS.

 **A**N old saying is, "Let well enough alone." It is a motto that ought to have a permanent place about your printing-bath. When you have a bath that gives good, clear, strong prints, stick to it as long as it will stick to you. If you wish to be surrounded by trouble of all sorts, try every formula of bath you see in print, try every addition you see, recorded, and you will be sure to forget to say your prayers before retiring at night. I will tell you my way of printing, but if you have a good one, "*Stick to your old shoes till you have the new ones broken in.*"

I work a plain soft water and silver bath, fifty-five to sixty grains strong, slightly alkaline. After you get through silvering, shake the bottle for about two minutes thoroughly, this will throw down the albumen; add once a week a small quantity of permanganate of potassium; keep your bath up to the standard strength; keep a small lump of alum in your filter. If the paper dries with tear-drops, rub it before silvering with a small tuft of

cotton, or, better, keep the paper in a damp place twelve hours before silvering. I had the tinner make me a tin tray the size of a sheet of paper; inside of this I had an extra bottom of strips large enough to hold the paper; put half an inch of water in the tray, lay enough paper on the false bottom the evening before you want to silver, and you will find your paper nice to handle in the morning. It is necessary to paint the tin, or the water will cause it to rust.

Blisters in prints? I hardly know how they look. I have used different makes of paper. It is with few exceptions the fault not of the paper, but of yourself. Keep all your solutions at the same temperature; especially have your hypo bath not too cold, and you will not be troubled much with blisters. The best lubricator I have ever used is as follows: White Castile soap about 24 grains, dissolved in a very small quantity of water; add alcohol 6 ounces; liquor ammonia 10 drops; glycerine $\frac{1}{4}$ ounce. Try this. Attend the Convention in 1883; you will feel doubly repaid, you will sleep sounder, and do better work.

(Reprinted from the German Correspondence of the Philadelphia Photographer.)

THE PRUSSIAN BLUE PRINTING PROCESS.

BY DR. H. VOGEL.

UN other day I tested an interesting light-tracing process, which gives a positive directly from a positive picture, in beautiful blue color (Prussian blue), and which differs materially from the common process (citrate of potash), which produces a negative picture. As in America many copies are made from drawings in the printing-frames without the help of the camera, this process will prove interesting to many, no doubt. The method is not new, but was published in this improved form by PIZZIGHELLI. The following three solutions are prepared in advance and kept on hand:

1. Gum arabic, 20 parts to 100 parts of water.
2. Citrate of iron and ammonia, 50 parts to water 100 parts.
3. Chloride of iron, 50 parts to water 100 parts.

These solutions, if kept in closed vessels, will remain unchanged for several weeks, with the exception of the solution of gum, which is apt to become sour in a few days.

When desired for use, mix solution of gum arabic 20 ccm., solution of citrate of iron and ammonia 8 ccm., and solution of chloride of iron 5 ccm., in rotation as they are cited. The mixture is at first a thin liquid, but thickens soon and becomes viscous, and in a couple of hours the matter is rendered turbid, in which condition it loses its viscosity and assumes the consistency of soft butter. In this condition the mixture is, according to my experience, best adapted for preparing the paper, and will keep in the dark several days without deteriorating in the least. The paper (a well-sized drawing-paper) is placed upon a drawing-board, where it must be immovably fixed on two sides by tacks or wooden fasteners, as in the following laying on of the solution the extreme viscosity of the latter causes so much strain that the edges are easily torn; and wrinkles and breaks in the paper are caused if the drawing-paper be not securely fastened down. Each break in the paper allows the sensitive solution to penetrate into the paper matter, which is manifested in the development by a blue line. The sensitive mixture is now poured into a flat cup and laid on with a broad, flat bristle brush, as equally and quickly as possible, taking care not to make the layer too thick. As soon as it is noticed that the brush begins to stick to the paper, the surface is equalized with a brush kept for that purpose. This operation can take place in subdued light. The prepared paper is quickly dried in a warm, dark place, pressed flat for use, and kept secure from light and moisture. The printing done in a common printing-frame from a positive upon glass, or upon tracing-paper, is to be considered as finished with the appearance of a distinctly perceptible yellow image upon darker ground, and lasts in the sun not more than five to ten minutes, and in the shade fifteen minutes and more, according to circumstances. The printed picture is placed upon a drawing-board, and the visible drawing is spread over, line by line, quickly and lightly with an otter's-hair pencil, with the following developing solution: Yellow prussiate of potash 20 parts, to water 100 parts. The picture appears at the time in dark-

blue color. As soon as all details have appeared, it is washed at once under the tap until free from all traces of developer; in which manipulation (as well as in developing) it is necessary to avoid moistening the back, because slight traces of yellow prussiate of potash, penetrating from the back of the paper, cause blue spots, distinguishable also from the front side. After washing—which need not take very long—the picture is immersed in a solution of 1 part of muriatic acid in 10 parts of water, and spread over with a delicate camel's-hair pencil, whereby the blue ground disappears and the ground becomes white, so that the lines in the copy stand out clear and clean. The picture is then washed to remove the acid. The process works very quickly, so that in fact a few hours are sufficient to finish a picture, even on a moderately bright day.

(Written for *Photographic Mosaics*.)

THE "HOWELL" COLLODION.

BY "WE."



WHILE we, that is, many of the fraternity, eagerly search through the columns of the *Philadelphia Photographer* for all news appertaining to the dry process, a large number of the profession don't care to drop the old favorite—the wet process; therefore, for the edification of our old wet-plate manipulators, I send the following formula, kindly presented to me by the veteran Mr. JOHN HILL, of Meriden, and I have found on trial that most splendid results can be produced with it. Mr. HILL calls it the HOWELL collodion, but not having seen it published, I send it to the *Mosaics* for 1883:

Iodide of Ammonium,	192 grains.
Iodide of Lithium,	64 "
Bromide of Cadmium,	128 "
Climax Cotton,	256 "
Negative Cotton (Anthony's),	64 "
Ether,	32 "
Atwood's Alcohol,	32 "

Also the following, to wit, with the above for contrast and intensity :

Plain Collodion,	1 ounce.
Iodide of Potassium,	2½ grains.
Bromide of Cadmium,	2 “
Iodide of Cadmium,	2½ “

This formula works fine when used alone as well as when mixed.

(Written for Photographic Mosaics.)

CYANIDE POISONING.

BY C. S. GERMAN.

THE business of photography and making tintypes as a profession is not an unalloyed delight in some respects, as can be attested by many of the votaries of the black art. They have started, it may be, without any knowledge of the poisonous effects of cyanide, and think they can remove stains from their hands with impunity by using it; and when told of their danger, they state that it does not hurt them at all. They are unbelievers of the fact till symptoms appear which they do not understand, and then, perhaps, it is too late.

The symptoms of cyanide poisoning are various, and differ in individuals. Dizziness, headache, bleeding at the nose, soreness and picking at the nose, deafness, blindness, paralysis, sores breaking out on various parts of the body difficult to heal, numbness, a staggering gait, and emaciation, are some of them.

“Don’t breathe the vapor,” say some; but I wish emphatically to state that the principal danger consists in washing the hands with it, and allowing it to run over the hands in fixing either negatives or tintypes. I know this to be the fact. The poison penetrates the skin; wash ever so well, then touch the tongue to the parts, and you can perceive the dreadful enemy still there.

A gentleman whom I knew well, lately went into the viewing business, and, though I had cautioned him, in a short time his

left hand and arm became numb, painful, and swollen. He came to me, and I told him it was cyanide. I directed him to bathe the parts with alcohol and ammonia, especially the latter, and he was soon relieved.


Another gentleman, also a viewest, stood it better; but after about three years' pretty steady application of the cyanide solution to his left hand and arm, sometimes getting his sleeve quite wet with it, he too yielded, and had to sell out. And so it goes. But what are we to do? It can't very well be dispensed with. I contend that the danger from its use is very small, if not allowed to touch the hands. The vapor is heavier than common air, and therefore need not be inhaled to any great extent. Only be careful.

I have enumerated some of the symptoms, but I am impressed that there are others. It affects the mind also. The unhappy subject imagines himself a great artist; there are none of his neighbors that are at all equal to him; and he calls his den "Emporium," "New York," "Philadelphia," or "Boston" gallery. He imagines a certain fine young lady dead in love with him, in fact "all broke up." He writes tony articles for the journals, which, after you have read, you do not know whether you have read anything or not. In fact, I am inclined to believe that much of the twaddle we read in the journals is due to cyanide poisoning. Ought we not to be very careful in the use of it, then? I think so. And now that I have re-read this article, I cannot tell whether there is anything in it or not. Can you?

(Written for Photographic Mosaics.)

WHY ARE GELATINE PLATES MORE SENSITIVE THAN COLLODION?

BY D. BACHRACH, JR.

 WOULD this question be answered as fully and clearly, and solved as thoroughly, as some other chemical problems, the probabilities are that the fact which is acknowledged by the question would no longer remain one. Without going

into technical details, it will be sufficient to state that the sensitiveness of bromide of silver in gelatine films is due both to the vehicle, gelatine, and to a peculiar change in the condition of the bromide caused by a more or less prolonged emulsification with gelatine, of the exact nature of which we are as yet in the dark. We only know that in this condition it is of a light spongy nature, in an extremely fine state of subdivision, of a light greenish color, and not in its original powdery nature as first precipitated. When we are once acquainted with the exact nature of the change undergone, the writer does not hesitate to declare that means will be found to use it as readily with collodion, which has many obvious advantages over gelatine as a vehicle or film.


Close observers have noticed what great influence the condition of the pyroxyline has upon the sensitiveness of a plate in the collodion process; in fact, sensitiveness is produced by the maker of the gun-cotton, not by the formula for the iodides and bromides. Every one knows the influence that a comparatively low temperature of the acids has in producing a sensitive cotton with a powdery short fibre, taking into account also the specific gravity of the acids. It has furthermore been found that a cotton which has been dissolved and precipitated again with water, and thoroughly washed (as in emulsions) and freed from all organic substances (such as starch, etc.) which are soluble in water, gives a far finer and more sensitive film than a sample of the same cotton not treated that way. The writer, who has lately been using SCHERING'S "Celloidine," which is made on this principle, has found it to make a collodion fully double as sensitive as the ordinary kind, and in this his experience is similar to that of SCHLEIER, of Nashville; HESLER, of Chicago, and numbers of others. It is to be remarked, however, that with this increase of sensitiveness and a finer deposit in the film, we have the usual accompaniment of a lesser amount of contrast and intensity, and a tendency to flatness, which latter, however, is easily guarded against by more contrast in lighting the subject. This shows conclusively that the character of the film has a large influence in determining the sensitiveness of the silver salts contained therein. With

these facts in view, who shall say that in time collodion will not be found fully capable of yielding as sensitive a film as gelatine? The writer has strong faith in the possibility thereof, and it only remains for those with the requisite ability and perseverance to work out this problem. That it is worth the while, it would seem that scarcely any one acquainted with the subject can doubt. When it is accomplished, the day will have come when each one can as easily prepare his own sensitive dry plates as he does now the wet plates.

(Written for Photographic Mosaics.)

TRY THE NEW FRIEND—WE MEAN THE DRY-PLATE. .

BY G. W. SITTLER.

O much has been written on this subject, that I have hesitated to attempt anything. Yet I feel that I want every photographer to try them, and add one more friend to the list. The dry-plate is indeed a friend. I have worked them now twelve months, and if they should cost me double what the present price is, I should use them. I have used them almost exclusively, and for the last four months I have not strengthened a negative. I make my oxalate thus: 4 ounces salts of tartar (carbonate of potash), dissolve in 16 ounces of soft water; then add 4 ounces of oxalic acid; stir in an open vessel until effervescence ceases; filter, and it is ready to use. Then make a saturated solution of iron, and to each ounce of filtered solution add 1 drop of sulphuric acid. Now for the exposure I give full time; and this is my way of developing. If you don't like it, don't use it; but it will not cost anything to try it. For a $4\frac{1}{2} \times 6\frac{1}{2}$ to 5×8 take one ounce of oxalate, and in a separate graduate one drachm of iron; to start, take not over half of the one drachm of iron, which pour into the oxalate and flow over plate in pan. Now, if the shadows start out soon after the stronger lights, don't use more iron; on the contrary, if the shadows do not appear, add the balance of the iron, which will bring up shadows in this way. I have given as much as eight seconds with

the largest stop in a 3 B. DALLMEYER, in strong light, and developed a good strong negative that didn't need strengthening.

I wash my negatives same as prints; that is, change them in dishes, so that it takes very little more water than with the colodion process. I never have them to frill or blister.

If these few lines will help a brother, I shall be pleased. In conclusion, I only ask you to try the new friend.

We use MORGAN'S extra-brilliant albumen paper, IRVING'S special, and one or two other brands; and silver on an acid bath: it never turns red, and we never have any trouble. We don't add acid to the bath, simply use water and silver—50 grains to the ounce.

(Written for Photographic Mosaics.)

THE DIFFERENCE.

BY J. H. REUVERS.

IN going and coming from our last Convention in Indianapolis, I stopped at several towns, and came in contact with several brother artists who did not get to the Convention. I just want to let the reader see whether it is enterprising photographers who go or stay at home.

I met one fully fifty years old, a very good artist. After the usual greeting, I asked, "Going to Indianapolis, I presume?" The answer to that I did not have to write down.

"No; I can't learn anything there. I know just as much as any of them there, if not more; it will do for you young tads."

"Thank God" for the gray hairs that were there represented. The old gent didn't probably know that a young man in the same town was getting away with his baggage. Another was this way: He replied, "I do good enough work; I offered to bet a man in town one hundred dollars that I could make better pictures than he could." He was a young man, making pictures not fit to look at. Such a one ought to be digging spuds instead of running a gallery—gallery did I say? Nay, it did not look like a gallery; it was enough to make a person nervous to enter such

a place. I am sure if such a person or persons would attend conventions, such a gathering of mixed brothers who all seem hungry for, and swallow up everything that was given to them; but also willing to instruct and give all the information possible, as was gathered at Indianapolis last, they certainly would feel like me, and most of them did say to themselves, I don't know hardly anything; or as one brother from Iowa remarked, When I get home again I will almost kill myself trying to improve my work. It made a person feel, at least I do, like I am not alone in the world; I am not the only one to contend with all the difficulty as well as pleasure in our art, and not only do we profit personally by going, but financially as well. Just to give you one example: You see some scenery you need; there you see the manufacturer. He advertises his goods at so many dollars. You can generally get them cheaper; at least I bought a set of accessories several dollars cheaper than ever offered to me before. Then you see a new style of card or style of picture; you go home and introduce it, and it will bring you home cents—at least this is my experience. It is not the lectures or papers read which you see printed in our journals, but the social gathering. It does a person good to see ten to fifteen groups together, to hear them tell each others' experience. We were this year nearly fifty strong from Iowa; we surely will double next August, and then all who go, do not forget to get your small photograph on one corner, for when you come home with a hundred cards all nicely framed, it certainly will make an attractive frame in your parlor.

(Written for Photographic Mosaics.)

PHOTOGRAPHIC FURNITURE AND ACCESSORIES.

BY O. T. BLOOD.

UHE introduction of the Tadema picture has made photographers realize the importance of having at their command a few pieces of desirable furniture, and a small variety, at least, of harmonious accessories. The difficulty of getting such

has led me to look into the matter somewhat, and to try to produce some styles which would be acceptable to photographers. In doing so I have had very kind assistance from our leading photographers. Among these are the Messrs. KURTZ, ROCHER, KENT, and others. Besides receiving instructions from abroad, I believe that what has been done in this direction will be kindly received and encouraged. I do not write this so much, however, to blow my own trumpet as I do to suggest as my morsel for *Mosaics* the propriety of photographers paying great attention to the excellent art instructions which have been given them by the editors of our magazines, and the contributors from time to time in this direction. I was very much surprised, a few days ago, on receiving a number of photographs from a photographer in this city, to find the greatest surprise in the furniture that I think I ever met with. The pictures which he sent me for my inspections were protected from injury in the post by a larger photograph which had been cut in two. The lower half exhibited the feet of a man standing in a mass of hay or straw upon a studio floor. Reaching down from as far as I could see, up the legs to almost the lowest border of his pantaloons was a white apron. The whole thing suggested a butcher clothed in his working garments, who had been pleased to have his picture taken in that way. For were not the accessories of the stable here and the badge of his profession? What was my surprise, however, when matching this lower half of the picture with the upper half, to find that I had made a dreadful mistake, for the rest of the figure, a burly fellow of forty, revealed to me the fact that he was clothed in full Masonic regalia. Behind him was an attempt at a lovely landscape somewhere among the Thousand Islands of the St. Lawrence, with a picture of the Yosemite Valley on the left, and two or three vases, such as we see in the cemeteries, more directly in the foreground. By the side of my Masonic brother was a chair, whose best days had long ago passed by. These accessories were considered the harmonious thing to introduce in a picture of a member of one of the best brotherhoods in the world. I need not go further in suggesting to those who are ignorant in this direction, for the love of photography, and for their own welfare, to study up

the subject more, and to give the attention it deserves. A little money spent in this way will pay back better, and sooner, than in any other direction, and I propose to do all that I can to assist in the good work.

(Written for *Photographic Mosaics*.)

PHOTOGRAPHY AND ORATORY.

BY E. L. W. B.

THE last words of *Mosaics* in 1882 were as follows: "In oratory, one not only must know how to use the voice and body, but must also verse himself in the elements of a liberal education." So in photography, an artist must learn not only how to pose the people, but must acquaint himself with all the principles which form an education—therefore read up. I do not think that I ever read a paragraph of five lines, and I believe I have read everything that EDWARD L. WILSON has published during the nineteen years that he has tried to make himself useful as a photographic publisher, which did me more real good than those five lines above that seem to come from him like winged words. I have committed them to memory, and repeated them to myself hundreds of times since I read them a year ago. The last year has been unusually prolific in photographic books; in no one year, that I remember, have so many been published, and so much useful information given. I desire to make a suggestion to those who have not fully read up. First, that they surely read everything that comes out with respect to their art, and next, a suggestion or two how to read. I will give but one example. Mr. BIGELOW's excellent work, *Artistic Photography*, I place on one hand, and on the other Mr. ROBINSON's equally valuable *Pictorial Effect in Photography*, and as I read the one I refer to the other for a practical example, comparing notes. Then I get down my WILSON's *Photographics*, and see what it has to say on kindred subjects, until I get myself so full of the matter in one direction, which I take at a time, that it is sure to bubble out and show itself, and help me in my work when I need it. And so in the department of photography, any subject may be taken

up and read and studied until it is made familiar; so familiar to the operator that he cannot forget it, and that he will be even insensibly affected by it in his work. I could go on to advise in this direction up to the full measure of the 144 pages of your little book, but brevity is the spice of wit, and if there is anything wherein I am above other things in this world, it is that I am witty!!

(Written for *Photographic Mosaics*.)

THE LITTLENES OF GREAT THINGS.

BY SOLOMON JOHNSON.

SINCE I hab had the pleasure ob peering befor de readers of dis *Mosaics*, my feelings hab ben hert considerably much. As I stated to my co-laborers, I hab ben now 18 long years a cleanin ob the plates for the photografic picters. During the passed yar my vocatin hab ben muchly depribed and suppressed by dis yere strange innobation called de plates ob de emulsion. Massa CARBUTT and BEEBE and CRAMER and de whole grand force ob de emulshun plate fellers, hab destroyed my vocation. Eben were dat not de fac, Mr. Editor, I should refuse you dis yar my usual contribution. Last yar, by your special request, I am made de resolution for to do someding for de service of de craft. I followed your advice, and placed myself, wid all my power and strength, particlarly de latter, inter my subject, hopin to accomplish a little good as de result. All de young fellows ob de craft wid whom I am well acquainted visit my dark-room, and dey always come when they want anything, to ridicule me for what they am calling the presumption for the advancin of my ideas in so popular a little work as am your *Mosaics*. Dis fac being so, I feel a drawback to my desire to give any more of my sperior knowledge fur de vantage of de craft. I now place myself on de shelf wid de solar camera patent, and the silber saver, and de bromide patent, and de old daguerrotype buffing wheel, and say "Farewell." You say, perhaps, What fore you gib up so easy, my son? I would answer, I would not gib up if it had not ben proved dat I must. And you say, How was de ting

proved? An I say because I confest it—den you asked me why I hab confest it? I said because I would not if it had not ben dat ebery body said it wus so. Den you would ax me, But why do you acknowledge it so? I hab to gib de answer, I would not did not ebery body know dat my Boss had gibben me a holiday for to allow him to use de emulshun man. Now he provide the plates bery clean, and there be no more use fore poor old Solomon. I am not spunky about it; I merely state de circumstance, and shall try to find some other method of providin a libin an de bread and de butter for Chloe an meself during de rest ob our natural lives. The only real trial I hab is during de munth ob March, but I most allus notis dat if I pull through dat disagreeable month with Chloe's help, dat I am ap to live all de rest ob de yar. So wid signing my jue cognomen to dis yere effusion I bid you all Farewell. I could gib you an idear about de intensification ob de emulshun plate—ask mas'r RAU—but I won't.

(Written for *Photographic Mosaics*.)

M. E., OR MASTER IN EMULSION.

BY F. C. PHILLIPS.

IF there is any gentleman who has assumed this title and believes himself entitled to it, I would like to ask of him a few questions, with the request that the answer be given through the pages of the *Philadelphia Photographer*.

How does he account for the unevenness of the emulsion film found frequently in the plates of nearly every manufacturer?

How does he account for the marginal insensitive lines which frequently are found upon emulsion plates, sometimes reaching as much as three-quarters of an inch into the plate?

How does he manage to intensify his plates without ultimate destruction?

How does he manage to secure the same strength, and snap, and vigor in negatives of interiors as he does in those of exterior subjects?

How does he manage to obliterate the thumb and finger im-

pressions which are frequently found in emulsion plates, and which cannot be discovered until the plate is developed?

How does he manage to secure the best results in his prints from emulsion negatives?

How does he find the best way of securing a color in his emulsion plates similar to that obtained by the wet process?

How did he become *Master of Emulsion*, and will he tell a fellow whether he can hope to *follow suit*?

(Written for *Photographic Mosaics*)

WHY IS IT?

BY H. H. FLANAGIN.

UHAT so few succeed financially in the practice of photography? Of course we do not expect itinerants to make anything more than they spend, since they are generally a class of spendthrifts.

But those who locate permanently are referred to. Very recently we have had brought before us opportunities for benevolence, and they seem to be cases that, judging from their reputation in photographic journals, we had supposed to be persons successful in our art to a very high degree. But promptly after their decease assistance is solicited. The adage "Come easy, go easy," should not apply in our case, because it is not such very easy work to one who applies personally mind and eyesight, often to the destruction of health, before much age is attained. Since, then, "The laborer is worthy of his hire," surely our labor should be fairly compensated; why then cut down prices?

A good deal has been said about art and the love of art. I opine that of the over six thousand photographers in the States, exceedingly few would realize an overwhelming love of it, were it not for a full as great love for the compensation. Yet, obtaining that, is there not a mistake somewhere that so few succeed financially? True, in every calling there are unsuccessful workers. Notice especially salaried persons; it would seem as if

they studied to spend all, rather than how to save one-half earned.

Since to succeed financially would be a mighty help to elevate the reputation of our calling, will it not be well worth while to make an honest effort in this direction?

(Written for *Photographic Mosaics*.)

DEFECTS IN VIGNETTING.

BY A. H. ATTWOOD.

U HERE are many defects in vignetting that a little skill in cutting and study of setting of the grader would obviate. The worst defect is the seemingly cutting off of the top of the head, or rather the lightening of the hair; the cause is a natural, and the remedy a simple, one. When the grader is only a quarter of an inch from the negative, a sharp line on the shape of the opening is shown on the print; but when it is raised higher to blend better, the defect spoken of above is more observed, and it is caused by a halo formed by the strong light (and it will show stronger when vignettes are printed in the sun) going direct to the plate and recoiling, as it were, forming a prismatic ring partially over the hair. On the body this is an advantage, as it assists in blending off the coat or dress; to remedy this, paste on thickness after thickness of tissue-paper, until the figure comes out bold, and the background recedes gradually to the sides or ends; as many as four to six thicknesses are required in some cases.

As to distance from plate and the size of aperture, the former should be at least half an inch for busts to one and a quarter inches for standing and three-quarter positions; and for the opening they should be a clear three-eighth to half an inch outside of head or three-fourth figure.

Again, notching, similar to saw-teeth of the grader, assists the dispersing light. Never let one particular shape, as, for instance, the pear shape, govern you; but cut openings somewhat in line of figure or accessory to be shown. One of the handiest tools for

a vignetter is a curved-bladed pair of scissors or shears, similar to what metal workers use; with them an objectionable corner or edge can be clipped off without removing the grader from the frame.

(Written for *Photographic Mosaics*.)

ORANGE THE ONLY TRUE LIGHT FOR DARK-ROOMS.

BY WM. CURTIS TAYLOR.

THE pleasant editor of *Mosaics* suggests that, if I have nothing else to talk about this time, I might say a word in continuation of *Orange vs. Ruby*. As a Baltimore friend contributes to this annual his experience, backed up by particulars, and all in favor of the orange light as superior to the red for all dark-room work, there is really little need to say much more to capture the attention of readers of *Mosaics*. A peep into the editor's own dark-room will show what he thinks about it. There is a flood of agreeable orange-yellow light from two windows in an outside wall containing fifteen lights of 10 x 16 inches. The darkest corner of the room is light enough to discover a pin; and readers can judge by this, not only the comfort, but the utility of performing delicate photographic work in the fullest light possible. It need not be said that Mr. WILSON's new foreign negatives are all on dry-plates, and such valuable work would not be trusted to any hap-hazard light.

Supplementary to what has already been written in the *Photographer* about complementary or opposite colors, it may be mentioned as a matter of interest, aiding, perhaps, sometimes in an investigation, that a very beautiful test of complementalism is to fill the eyes with a strong and decided color, of which you wish to find the opposite, and then close and cover them darkly. The complementary color will then appear to the visual organs as a kind of phantom. Performing this experiment with a powerful ruby light, we find the phantom a strong green; not *blue*, as it should be were ruby the opposite of the actinic ray.

(Written for Photographic Mosaics.)

REDUCING GELATINE PLATES.

BY R. BENECKE.

IT may not be generally known that dry plate (gelatine) negatives can be weakened *locally*, or, if necessary, all over, with more ease and safety than the collodion negatives; and since you wish me to contribute my mite towards your *Mosaics* for the year 1883, I thought the description of my mode of procedure would be acceptable to the users of gelatine dry-plates.

Dissolve a few grains of iodide of potassium in, say, half an ounce of water, then add to this solution a small quantity of iodine. With a small camel's-hair brush or a tuft of absorbent cotton brush some of this iodine solution over those parts which you wish to reduce in intensity. Wash, and go over the same parts with a pretty strong solution of cyanide of potassium. Repeat this operation until the intensity suits you. I generally have my solutions just strong enough, or I let them act upon the film long enough that four or five applications are required to obtain the desired result.

Now, whether all commercial dry-plates will stand this treatment, I do not know; but I should think so. I am using CRAMER & NORDEN'S plates; develop with iron and fix in hypo and alum (mixed according to formula). I hope that some struggling brother may be benefited by this (by no means new) wrinkle.

(Written for Photographic Mosaics.)

TO POUR A BATH SOLUTION.

BY EMERSON GODDARD.

WOULD your silver bath nearly flat, and pour the solution out without spilling a drop. A simple thing to do. *Yet it pays to do it.*

*(Written for Photographic Mosaics.)***PROGRESS—OR OTHERWISE?**

BY J. PITCHER SPOONER.

DURING a trip of three and a half months from the "Golden Gate" to "Plymouth Rock," the writer has found many pleasing indications of "progress" in our art, and some "otherwise." And in every case where "progress" was the rule, we found the photographic literature of the day at hand in abundance, and *none* at hand for "otherwise." In fact, wishing for an address one day in a large city in Massachusetts, I was obliged to enter five galleries to find a photographer who had any of the books of the craft containing it. We must not, therefore, tell it too loudly—that Jones does not improve, for how can he? He works, poor fellow, 365 days in the year, and has no time to read any of the doings of the craft; no time to take a walk and breathe fresh air, and get some of God's sunshine; his very dreams are all of fogs and undertimed plates; dirty hands, and rooms in glorious confusion. But the one gallery where I found the photographic book is closed Sundays, and the proprietor has now and then a day to rest or to take in a picnic during the week, and is better prepared thereafter for hard work, by being refreshed by a change of air and scene. We can all do so, and our lives will be prolonged. Try it, ye who are on the sick list, and recover.

*(Written for Photographic Mosaics.)***DRY-PLATE DEVELOPERS.**

PYRO OR OXALATE—MY EXPERIENCE WITH THEM.

BY A. HESLER.

HAVE tried every form or published formula of pyro with the utmost care—unless your time and light are *just right*, you will get red, yellow, or green fog. If undertimed, and the development forced, a hard negative, and fog is in my hands shown by the result. If overtimed, you are pretty sure

to get weak, thin negatives, even with a liberal application of bromide of potassium or ammonia, with the present quality of all the leading makes of plates. If you hit the time just right, and don't carry the developing too far, pyro, with almost any of the published formulas, will give you splendid results; but with babies, and fretful, nervous men and women, and changing light, you do well if you hit this about once a day. On the contrary, with the oxalate prepared as follows, you are almost certain of a good plate with almost any kind of exposure. Oxalate of potassium, P. and N., make one pound; water, 60 ounces; dissolve with heat, when cold filter, and add three-fourths of an ounce saturated solution citric acid. To prepare, take one pound of the crystals and put in a wide mouth bottle; add water enough to cover the crystals; shake up; after standing one-half hour or so, you will have saturated solution. This is always ready for use, if the crystals are kept covered with water. I dissolve ten pounds of the oxalate at once, and after adding the citric acid it will keep indefinitely, and is always ready for use. Make a saturated solution of iron, to which add one drachm of sulphuric acid to each quart.

Your oxalate prepared with the above quantity of citric acid will hold one-fourth its measure of iron without precipitating, and will work with shorter exposures than any pyro. I have tried. I start the plate, or soak it a minute or two in old oxalate developer that has been used for a dozen more, and if it does not come up quick enough, take fresh mixed and continue until you get all the strength desired. If by accident or mistake you have overtired a good deal, add bromide of ammonia, *plenty*, to the old or a weak developer, and let the plate lie in that until as thick as desired. With the above there is no danger of fogging by any length of time in developing. My experience with the hyposulphite or hyposulphate is, the less you use of them the better. If you want to store away and keep your negatives, don't spare the washing. I soak for at least one-half hour in several changes of clean water, and between each a good washing under the tap. As to developing vessels, many recommend the dip or upright dish with oil over it. "I don't want any in mine." All kinds of iron trays have the objection of rusting

and causing pin-holes or specks; that has been laid to the fault of the make of plate. Japanning is no protection, except for a short time; rubber gives the same trouble after a little use. The best thing for small trays up to 11 x 14 is wood, one-half inch pine for the ends and sides, and one-fourth of an inch for the bottom, the joints put together with white-lead and well nailed, the nails sunk in, and the heads covered with lead and putty, equal parts of each. Clear off all lead that oozes out in the nailing, sand-paper smooth, round all corners and edges. Take yellow bees-wax one pound, turpentine spirits 4 ounces, dissolve the wax with the turpentine in a hot-water bath. Heat your tray hot either in an oven or at a stove. Apply the hot-wax solution all over, and heat in the wood; repeat this two or three times, heating the wax well in the wood each time; now give a coating of melted wax without the turpentine, and you have a tray at very little cost that will last for years, for any place you can use cold solution, and no danger of spots or damage to anything you require it for, and if it falls it won't break. For larger size trays up to 25 x 30, I have for the last twenty-seven years used wood trays with glass bottoms. The sides made any desired depth, 3 to 4 inches are about right; nail together with white-lead in the joints, make a deep sabet in the bottom edge for the glass to lay in, use double-thick cheap glass, and put in with lead and putty, one-half each mixed; on the outside or bottom bed in and nail a strip of one-fourth round, also bedded with the same putty, and give the waxing above, and you have a "boss" tray for any purpose. A cheaper, larger tray can be made with any kind of rough flat box, lined with carriage or thin oil-cloth. In all this I give nothing new, but my experience, for the benefit of whom it may.

THE true way for the would-be successful emulsion photographer is to go slow at first, feel the way, find out the best mode, and then accept it and adhere to it. Of course, we do not mean by this to head off experiments or trial when the results are not fully satisfactory. It is every man's duty to do his best, and, knowing what is best, to strive and work until he secures it.

(Written for Photographic Mosaics.)

SAVE YOUR FIXING SOLUTIONS!

BY D. H. CROSS.

THE following I hit upon a few months ago, and have found it so simple and satisfactory, that I send it to you for *Mosaics*. Provide a strong jar, of say three gallons capacity, *with cover*. Pour into it fixing solutions from negatives, tin-types, or prints—any *or all*, and to each gallon add three ounces of commercial sulphuric acid; stir a second, cover, and let stand until next day, or until you need it again; pour off the clear solution and repeat. The silver settles completely in a few hours. The cover prevents the escape of sulphurous gases evolved during the reactions. I much prefer this to “sulphuret,” or sulphite of potassium, as it is sure to settle in less time.

Save your money, and use cheaper lenses for views or portraits, if you use dry-plates. I am using the front lenses of a pair of ninth gem tubes for stereo and five-eighth views, and get as good definition and quality, and almost equal rapidity of the most costly lenses. The front lens of a 4-4 DARLOT portrait tube does all my work from 8 x 10 to 20 x 24, and when I realize that \$32 is all the three lenses cost, I can but exclaim, *what a saving!* and in so short a time (three or four years) enough to equip a gallery. Who shall say the world does not move? We can credit the dry-plate with this result.

A word to the inexperienced in regard to developing with oxalate, and I am done. I have seen several cases recently of *spots and fog*, caused by the japanned trays for developing in the market. Use porcelain, or better, glass or wood ones instead; if the latter, wax them with equal parts beeswax, paraffine, and rosin; drive it in by heat. Be sure of purity in the salts employed. When you find a good article, secure a quantity of it, and don't change unless you want trouble. Notice the effect of *little changes* in exposure and developer. A drop more or less of bromide solution or hypo, added in mixing for immediate use, will make a very noticeable difference in the negative. Remember that dry-plates are more sensitive to chemicals as

well as light than the old collodion plates, at least in a certain way. Don't lose your grip because you can't beat the old ones *at once* in *quality*, but trust and study your new friend; and I will assure you that you will make a far greater per cent. of good ones by the new process in a short time, and equal the best when mastered, much oftener than by the old process.

(Written for *Photographic Mosaics*.)

PYROGALLIC DEVELOPMENT.

BY GEORGE SPERRY.

FROM the introduction of gelatine dry plates the ferrous-oxalate developer has apparently been the favorite with the professional photographers of this country. But a careful observer at the recent Convention, by making a few inquiries, would have come to the conclusion that for good, uniform, everyday work, the greatest dependence could be placed upon the pyro developer, and that the majority of successful dry-plate workers were using it.

The drawbacks to its more general use have been: Its apparent complications (more fancied than real); color of the film; liability to yellow stains, red and green fog, etc. As to the first, it has been disposed of. The next, although one of its advantages, has been its greatest objection, viz., the color of the film. Compare prints from an oxalate and from a pyro plate, of equal printing densities, and you will discover details in the pyro plate that are wanting in the oxalate. The color of the pyro negative preserves the details in the shadows. Yellow stains are caused by forced development, or any state of the solution that tends to rapid oxidation without sufficient restraining power. In this connection neutral sulphite of sodium has been recommended. This is a great absorber of oxygen. A large amount of pyro can be used with this with very little discoloration. A four or five grain solution is best. No particular care is necessary as to amount used; a little practice will determine that. This is quite valuable in hot weather, as a means of keeping down the temperature of the different solutions.

As to red and green fog, I can speak very little from experience. I use EDWARD'S glycerine developer, with which fog very seldom makes its appearance. Dilute hydrochloric acid, if given time enough, will remove it. Perchloride of iron is very energetic, but is not to be recommended. The following is excellent for removing any uniform stain, and is a good reducer, but not very energetic. I discovered it in the following curious manner: In a great hurry one day I developed a plate with an old solution of pyro. As a matter of course, I got a badly stained negative. I attempted to clear it with hydrochloric acid, but concluding it was too badly stained to save, started to pour the acid off, and by mistake poured a portion into a solution of alum.

Wondering what effect it might have, I poured the solution on the plate, and, to my astonishment, the stains gradually disappeared.

The proportions should be about 1 ounce of pyrogallie acid to 25 or 30 ounces of saturated solution of alum; regulating by the depth of the stain the proportion of acid. The amount of acid cannot be greatly increased. I should very much like to know if this has ever been used for this purpose.

Now for the advantages of pyro. 1st. Economy; no small item. 2d. Simplicity. Yes! I said simplicity, and I am sure you will agree with me after giving it a fair trial. 3d. Softness and delicacy of detail; greater latitude on exposure; printing qualities; shorter developments, etc.

I would recommend EDWARD'S glycerine developer, as given by Mr. DIXON at the late convention.

(Written for *Photographic Mosaics*.)

A PECK AT YOU.

PRINTING BATH, AND HOW TO KEEP IT IN ORDER.

BY C. S. PECK.

TAKE distilled water, any quantity; add nitrate of silver until it tests fifty grains stronger. Add of a saturated solution of bicarbonate of sodium until there is a slight precipitate of carbonate of silver. Always keep a little carbonate of silver

in the bottle and you will always know your bath is alkaline. This saves testing with litmus paper, and your paper *will not* turn yellow, and your prints will be all you would wish. I silver about three minutes, double gloss-paper, and fume fifteen in winter. Paper floated three-minutes on this bath will not be likely to blister. After the bath becomes charged with albumen I boil it a few minutes. This soaks the albumen, and it will filter out. This is a simple method, and it works beautifully in my hands. Every photographer should have plenty of distilled water and use it. You will find on page 182, June number, 1881, of the *Philadelphia Photographer*, a simple apparatus for distilling water. It is not necessary to have the reservoir B.; simply have the condenser C. made as large as the reservoir B.; this saves the use of cold water around the condenser C., which is quite an item especially where the water supply is limited. You can fill this with soft water in the morning, and set it on your heater, and at night you will have about two gallons of pure, distilled water, and the trouble and expense is not worth the mentioning.

(Written for *Photographic Mosaics*.)

EXTRA PAY FOR RETAKING NEGATIVES.

BY H. W. IMMKE.

UWO years ago last summer I commenced charging fifty cents for each resitting for negatives, stating to my patrons that at the present prices I could not afford to make extra negatives after having made one according to order. I shall not go back to the old system of making resittings free of charge, unless when a negative is defective, and I therefore prefer to make another. However, I take special pains to obtain the best results possible before each subject leaves the gallery. I think it unjust to charge one person who is satisfied with the first good negative the same price as another who has from two to six negatives, with proofs from all. My experience is that if our patrons know they have to pay for extra negatives, they are more careful about their toilet, and in deciding what style of picture they prefer. I am now making cartes at \$2.50, and cabinets at \$4, per dozen. I am not in favor of low prices; but I can make at

least as much if not more money than when I got \$3 for cartes and \$5 for cabinets, per dozen, and made as many negatives as customers chose to be satisfied with. This also makes it harder for cheap local competitors, and I retain many customers who would otherwise go to large cities where they advertise.

"First-class cabinets at \$3 per dozen; satisfaction guaranteed;" means with some subjects (who have nothing to do in this world) to come and sit as many times as they are allowed; even then they may complain "that they have not received satisfaction." The past two years have been the pleasantest to me in my business, and my work has been more satisfactory than formerly. Now my patrons expect to pay for retakes, and don't complain about it. We should charge for our services the same as is customary in other professions. The physician, for instance, charges for each professional service, and whether the patient lives or dies he collects his bill. Why, then, should not the photographer charge for his services, when skilfully done? If we try to please our patrons with well executed work, charging a reasonable rate, and get our pay when the work is ordered, we will have more time for recreation, and make more clear money (lose none on waste material); so that we will all be able to go to the next Convention, at Milwaukee, in August, 1883.

(Written for Photographic Mosaics.)

A FEW WORDS OF ADVICE.

BY J. A. W. PITTMANN.



T present all eyes and ears are turned toward the bromo-gelatine dry plates. They are indispensable in all well-regulated galleries, especially for children and very nervous persons, where rapidity is necessary; also for outdoor views, and dimly lighted interiors. But, if you have a good light and quick-working lenses, go slow in discarding your old (but sometimes fickle) friend, the negative bath. But study and work the gelatine plates until you are able to do as fine average work with them as with the wet plates. When you have accomplished that, then you may discard the latter; for, in my opinion, that

time will speedily come with the diligent and careful workers. But, be sure and keep up the quality of your work while you are mastering the dry-plate process.

A good collodion is the first requisite for the wet plates. Always get the purest of chemicals, and compound them with care. Weigh or measure everything. For collodion, I use alcohol and ether, equal parts, 1 ounce; iodide of ammonium 5 grains; bromide of cadmium $2\frac{1}{2}$ grains; gun-cotton 5 grains.

If you want more detail, add more bromide; and if you wish more contrast, add less bromide. This will work well in four or five days, or, by filtering and adding some old collodion it is ready for immediate use. I use ice-water for making my negative bath, previously purified by adding about three grains of silver to the ounce, and leaving it in the sun. Make it forty grains to the ounce of water, and to every gallon add five grains of iodide of potassium, previously dissolved in a few drops of water. Shake thoroughly, and let it stand over night; or it may be filtered immediately, and enough concentrated pure nitric acid added to make it slightly acid.

Develop with iron $1\frac{1}{2}$ ounce; saturated solution of alum in water 32 ounces; acetic acid $1\frac{1}{4}$ ounce. Albuminize your glass carefully. I have a board on which I cut my glass with a ledge on the left edge, and pins at the top and bottom for the different sizes of glass; each glass is placed on this board, and if it is too large I trim it with the diamond. I then carefully grind the edges on a grindstone; so there is no danger of cutting the hands. I have my negative bath so arranged that, after immersing the plate, I tip the top back, so that the face is down while it is coating.

Finally, read everything pertaining to photography that you can get, and keep well posted. Keep your gallery neat and clean, and be on hand early to attend to the wants of your customers. Treat them with politeness: it is cheap, and pays a large per cent. Keep a cheerful expression on your face, and you will be more likely to secure it on that of your sitter. Charge fair prices for your work, and make it worth the price. And last, but not least, "Remember the Sabbath day to keep it holy."

(Written for *Photographic Mosaics*.)

MANY MITES FROM MANY LANDS.

BY EDWARD L. WILSON.

IN Manchester, England, a photographer uses a circular of information with respect to coupons and tickets for cartes-de-visite and cabinet photographs. These coupons, it appears, are sold for a certain price, and entitle the purchaser to a certain number of photographs, to be taken within a given time or date, good at any of the various studios owned by the proprietor. An offer is made also to copy photographs of persons at the same price. A little less than three shillings (seventy-five cents) is the price at which cartes-de-visite are offered, and only half the usual price for duplicates; and yet a man who is able to make pictures at this price boasts that this is the fifth year that he has issued these coupons and tickets; and he also promises that his cartes-de-visite and cabinets will be as well finished as those at the usual prices. Family coupons are issued also, for one guinea, which entitles a family of six persons to one dozen cartes-de-visite each. And thus the wicked work is scattered all over the land.

THE circular of the Manchester firm alluded to above, was sent to us from Australia by one of our readers as a reason why prices were low in that far-off country. A photographic tramp pesters that land as well as our own, and gives legitimate photography a good deal of trouble. And yet this far-off friend writes to us a very cheerful letter. Among other things he says, "I have been a subscriber to your magazine for three years; I also have the *Photographics*, *Mosaics*, ROBINSON'S *Pictorial Effect in Photography*, HEARN'S *Practical Printer*, HEARN'S *Artistic Photography*, and the *Art of Retouching*, and now send an order for three copies of the *Photographics*, and three *Mosaics*, for the boys of our staff, in order that we may all have them. I thank you for the samples of splendid work which you continually give us in your magazine. I must say that the little *Mosaics* groups are just the thing; they give us a number of examples instead of one. Dry-plates are all the rage

here; everyone of any consequence uses them chiefly. I do think, however, that the old bath-pictures are the best, though we have much to hope for in the new process."

PHOTOGRAPHERS, like human beings, are very much the same all the world over. We have seen them a thousand miles up the Nile; away up amid the ruins of Baalbeck, in Syria, and even in the ancient city of Damascus. All practice the cut-throat system; neglecting to make the best work they can, so as to merit the best patronage; and paying more attention to the tricks of their neighbors than to the production of their own work. A lack of conscience in the different branches of the work is also evident to one who is posted. One cannot help but feel regret that more care is not taken all over the world to keep photography on the right track, and to keep it in good repute. Why need you care what your neighbor does, when you yourself do well?

THE *Photographische Archiv* mentions a portrait which caused quite a sensation lately in Paris. It represented a little boy, standing alone on the edge of a high cliff, looking down the supposed immeasurable abyss. Of course, everything was counterfeit; but, nevertheless, the picture drew quite a large number of *flaneurs* from the boulevards. The cliff, with its abrupt edge, as it stood in the studio was about half a meter high, and behind it a sky background with quite narrow horizon was placed. The effect of imminent danger to the innocent little toddler was quite striking.

"THE very best developer in the world" will be found on another page. It is a little amusing to receive letters from the gentlemen who so widely differ from each other, which come with their articles, declaring that what they send is "the best developer in the world." The real fact of the matter is, that a developer has not yet been discovered that will always prove the best in every case. Each plate-maker seems to have a method of his own, peculiar to himself, which oftentimes requires different treatment of the plate from that required by others; and, as in treating albumen paper, modifications must be made, so, in handling emulsion plates, must modifications be made.

*To Photographers, Crayon Artists,
Water Color Artists, Portrait
Painters, Workers in Pastel,
Crayons, and Amateurs:*

IT will pay you to write for my new reduced price-list of Photographic Stock, Amateur Outfits, Artists' Materials of all kinds, and Books on Photography and the Fine Arts. Will send it free, to any address, on receipt of a request for the same. When you write for it, please inform me what branch of the business you are now engaged in. In making prices, I have endeavored to recollect that low prices for good goods make the best advertisement any business man can have.

Hoping to hear from every artist in the United States and Canada who has not already received it, I remain

Yours truly,

W. R. REID,

Manufacturer, Importer, and Jobber of Fine Art Goods of all kinds.

352 & 354 Euclid Avenue,

Cleveland, Ohio.

→*FOREST CITY*←

Photographic Stock Depot

Nos. 141 & 143 Broughton Street,

SAVANNAH, GA.

O. PIERRE HAVENS, . . . Proprietor.

CHAMPLIN'S VIGNETTING ATTACHMENT.

To be used with Cut-outs or Weymouth's Vignette Papers. Patented August 1, 1882. The latest and best ever offered to the profession or amateur. The finest results can be obtained in an easy and simple manner, and at the same time a saving of two-thirds the labor necessary to produce the same after the old fashion.

Two tracks, B, are attached to printing-frame, and in these tracks a slide, C, moves. Over this slide a sliding box-frame, D, is held in place by guide-strips in such a manner that the box-frame may be moved transversely over the slide. The inner surfaces of the frame,

D, are grooved to receive the edges of the frame which carries the Vignetting card or design. By these devices the card-holding frame can be adjusted a greater or less distance from the negative, and the sliding-frame, D, may be shifted to any desired position.

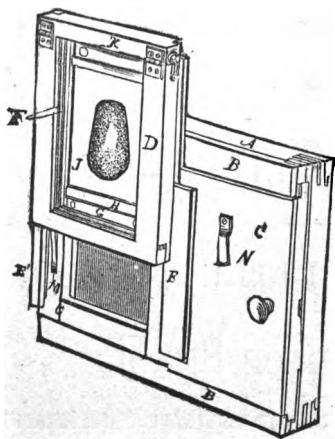
The above attachments are made in two styles, single and double. The double, as shown in the accompanying cut, are used to vignette half of the plate, the other half being completely masked, thus making it convenient for two negatives on plates, either of which may be vignetted. The single are the same except that the box-frame, D, covers the entire negative, these are used for one on plate. They are made of black walnut and are light and durable, all slides reverse, and are held in position by springs, and can be easily withdrawn from frame by drawing slide, C, leaving nothing in the way of plain printing.

PRICE LIST.

Double, $4\frac{1}{4} \times 6\frac{1}{2}$ to 8×10 , inclusive, \$1 00
Single, $\frac{1}{4}$ to 8×10 , inclusive, . . . 75

Address,

W. L. Champlin, Whitestown, N.Y.



W. D. GATCHEL & CO., LOUISVILLE, KY.,

Have a Full and Complete Line of all
articles required by

PHOTOGRAPHERS,

both regular workers and amateurs. Having largely increased our stock and facilities, we offer inducements that can not be excelled. We have supplied the West and South for the past

TWELVE YEARS,

and can furnish just what is wanted. We will supply

The BEST GOODS,

With HONEST LABELS,

At the LOWEST PRICES,

and deduct three per. cent. for cash on all bills of \$10.00 and upward.

SEND FOR PRICE-LIST.

W. D. GATCHEL & CO.,
309 W. Jefferson Street,
LOUISVILLE, KY.

1878. **EAGLE** 1883.

STOCK HOUSE.

—TO—

PHOTOGRAPHERS.

I would be pleased to hear from you, and can assure all that orders will receive prompt care and attention.

I am doing business only one way, viz.: **STRAIGHT**, and for cash at cash basis. I am not in the business *for a day*, but *for all time*, and calculate to sell photographers *not one order, but right along; in fact, to create customers.*

Prices fluctuate, markets change, and no price-list represents *exact prices*. Mine are sent to any one requesting them, subject to market changes.

BARGAIN LISTS PUBLISHED FROM TIME TO TIME.

Trusting to hear from the trade, I am

Yours truly,

GEO. MURPHY,

No. 250 MERCER ST, NEW YORK.

*1863 to 1871, with Anthony's; 1871 to 1878, with W. B. Holmes;
1878 and all time,*

EAGLE STOCK HOUSE.

A. M. COLLINS, SON & CO.,

Photographic Card Warehouse,

No. 527 ARCH STREET, PHILADELPHIA.

ON HAND AND MADE TO ORDER IN A LARGE VARIETY OF SIZES AND COLORS.

MOUNTING CARDS, White and Tinted.

MOUNTING CARDS, with Gilt Oval and Square

Openings.

CARD BOARDS, with India Tint Borders for 4-4,

8-10, 11-14 Photographs.

CARD BOARDS, with India Tint and Gilt Borders,

for Cabinet size, to 14 x 17 Photographs.

CARD MOUNTS. VICTORIA MOUNTS.

149

CABINET PORTRAIT CARDS.

STEREO. MOUNTS. PROMENADE CARDS.

BOUDOIR CARDS. IMPERIAL CARDS.

THICK BEVELLED-EDGE GLACÉ CARDS.

THINGILT & RED BEVELLED-EDGE CARDS

GLACÉ CARD BOXES.

PAPER MATS, White, Tinted, Black, and Chocolate.

FERROTYPÉ MATS.

**Slee's PATENT
PREPARED CARDS.**

**Fitzgibbon's PATENT
ADHESIVE Ferrotypé Mounts.**

CATERSON'S PATENT FERROTYPÉ HOLDERS.

OLENOH'S PATENT "PLAQUE" MOUNTS

—KURTZ'S— Posing Apparatus.

PATENTED NOVEMBER 7th, 1882.

BY WHICH

All kinds of Artistic Effects are easily obtained in a new way.

BY WHICH

One-third of the Regular Exposure is gained.


BY WHICH

One-half of Negative Retouching is unnecessary.

BY WHICH

More true and life-like Portraits are obtained.

For circulars, terms, etc., apply to

 G. HOEFLE, Sole Agent,
No. 6 EAST TWENTY-THIRD STREET,
NEW YORK.

Economy is Wealth.

We have the largest facilities for refining

PHOTOGRAPHIC WASTE



Our charges are very moderate, varying from ten to fifteen per cent., according to quantity and quality of waste.

We make quick and honest returns, and solicit a trial.

A circular, "How to Save Waste," is mailed upon application.

CHAS. COOPER & CO.,

No. 194 Worth St.,

New York.

ESTABLISHED 1857.

THE PLAQUE,

A NEW STYLE OF PICTURE.

A GRAND, A PERFECT SUCCESS!

BE THE FIRST TO PROFIT BY IT.

PATENTED, OCTOBER 10th, 1882. PATENT FOR CARDS, DEC. 5th, 1882.

The undersigned, after much careful experiment, has just now perfected machinery and other means for producing his NEW INVENTION, and is prepared to supply apparatus and instructions to photographers, made with special care.

THE PLAQUE is a cabinet-size picture, mounted on Clench's specially designed cards; vignetted, and depressed concave in a deep circular-cameo form, with a peculiar rim to represent a Plaque.

It is very beautiful and attractive. Having found that it would save my fellow-photographers a great deal of stumbling, waste of time and money, if given in hand full instructions and machinery to produce *The Plaque*, I have prepared myself to supply

Licenses for the full term of my Patent; Presses, Dies, and Accessories; Full Instructions to make Plaques, and Card Mounts of Plaque Designs, at reasonable rates.

I do not wish to sell *exclusive* licenses at present, believing *all* photographers should share the advantages of my patent; I shall have no travelling agents, as there is no necessity when my full instructions are followed. Saving that expense, I can sell licenses and machinery cheaper. I will send four sample Plaques for \$1.00. Outfit licenses only \$25.00.

OUTFITS and CARD MOUNTS For Sale by all Dealers.

For the Opinions of Tasteful Photographers concerning
The Plaque, see opposite page.

WHAT PHOTOGRAPHERS THINK OF THE PLAQUE.

At the time this page was prepared *The Plaque* had only been offered to photographers a little over a month, yet I am selling outfits at the rate of six to ten per day, and without a single exception, so far as I have heard, buyers and users are delighted and satisfied, and are having success at once with the Plaque.

From among others, I add a few

—TESTIMONIALS.—

"Send me the complete apparatus with full instructions for making, also 400 mounts."—F. W. GURRIN, *St. Louis, Mo.*

"Send me the outfit immediately."—ALVA PEARSALL, *Brooklyn, N. Y.*

"The style is quite worthy of admiration. Please send me a full outfit."—C. M. FRENCH, *Garrettsville, O.*

"I think them very nice. Send me the outfit with instructions."—E. R. CURTIS, *Madison, Wisconsin.*

"Your Plaque is new, neat, and nobby. Send me the outfit. I like them very much."—CHARLES W. BUELL, *Warsaw N. Y.*

"I want to make Plaques. Send me the outfit."—L. R. EVANS, *Scranton, Pa.*

"I like the style very much, and believe as a novelty that they will take a good run. I would be glad to introduce them in my business. Please give me all the necessary information."—J. F. RYDER, *Cleveland, O.*

"The more I look at them the more I wish to know about them. Send me the outfit with full details."—J. J. WOLFE, *Lancaster, O.*

"I think them quite pretty and nice, and they will, no doubt, prove a desirable novelty."—E. L. BRAND, *Chicago, Ill.*

"They are fine. I would like to have the exclusive right of my town. Send me the outfit at once."—J. H. REED, *Clinton, Iowa.*

"I think them very nice."—CHARLES AKIN, *Evanston, Ill.*

"They are very neat. Your style of mounting them is original."—E. D. ORMSBY, *Oakland, Cal.*

"They are very pretty and I want them. Send outfit promptly by first express."—C. C. PACKARD, *Kalamazoo, Mich.*

"I am 'gone struck' with the idea, and desire that you will at once grant me permission to take them, even before your patent is issued."—E. POOLE, *St. Catherine's, Ontario.*

"Send me the outfit with full details and stock of cards."—R. E. ROCKWOOD, *Union Square, N. Y.*

More are pouring in each day, but these are enough to prove that *The Plaque* is bound to become the leading picture for 1883.

A mosaic of 16 Plaque reductions is "Our Picture" in both *The Philadelphia Photographer* and the *Photographic Times and American Photographer* for December, 1882.

F. B. CLENCH, Lockport, N. Y.

 Outfits and Card Mounts For Sale by all Dealers.

WILSON'S PHOTOGRAPHICS.

A PARTIAL PHOTOGRAPHIC ENCYCLOPEDIA.

By EDWARD L. WILSON, *Editor Phila. Photographer, Photo. Mosaics, etc.*

A STANDARD BOOK FOR ALL WORKERS IN PHOTOGRAPHY.

CONTENTS.

- | | |
|---------------------------------|--|
| A. Treatment of the Subject. | P. Printing on Various Surfaces. |
| B. The Needful Apparatus. | Q. Printing Perplexities. |
| C. The Objective or Lens. | R. Art in Printing. |
| D. The Dark-Room. | S. Mounting and Finishing. |
| E. Preparation of the Glass. | T. Photography Outside. |
| F. Chemicals and Solutions. | U. Bromo-Gelatine Emulsion Work. |
| G. The Manipulations. | V. Vogel's Collodion Emulsion. |
| H. Manipulatory Miseries. | W. Enlargements & Lantern Slides. |
| I. Retouching the Negative. | X. Phototypes, Platinotypes, and
Collodion Transfers. |
| J. The Glass Studio. | Y. Wastes and their Worth. |
| K. Accessories and Light. | Z. Metrical Measuring. |
| L. Managing the Model. | &. Concluding Confab. |
| M. Printing on Albumen Paper. | [Index (Six Pages)]. |
| N. Printing on Plain Paper. | |
| O. General Remarks on Printing. | |

It is believed that this is the most valuable work ever offered to the working photographer.

It contains 352 pages; 7 x 8½ inch cover, and is 1½ inches thick. More than 100 illustrations. It gives full details of all practical

PROCESSES, OLD AND NEW, PUBLIC AND SECRET.

Among the latter are the "Phototype," sometimes called the "Artotype" process, with examples; many of the "Lightning" processes; the "Platinotype" process; the "Collodion Transfer" or "Megatype" process, and many others.

58 pages are devoted to Posing and Lighting; 37 pages give instructions in Emulsion "Dry" Work; 29 pages show how to Build and Use Skylights; 108 pages furnish instructions for Manipulating Negatives; 37 pages are devoted to Printing Formula and Dodges; 175 pages give Notes from Authors all over the world.

It is printed on fine white paper, made especially for it, and sold at the low price of

\$4.00 POST-PAID \$4.00.

For the beginner, for the amateur, for the photographic worker, it is believed to be most complete. No live photographer should fail to get it soon, before his neighbor is ahead.

EDWARD L. WILSON, Author and Publisher,

912 & 914 Chestnut St., Philadelphia, Pa.,

WILSON'S PHOTOGRAPHICS.

It is suggested to amateurs, employés, wives, etc., who may have friends, relatives, or employés interested in the beautiful art of Photography, that

THE VERY BEST PRESENT

You can put in their hands is a copy of this Exhaustive Work.

"I bought a copy of your *Photographics* last fall. I would not take many times its cost for it. I like the general plan of the book far better than any work I have ever seen on Photography. Hope it will be to you, what I know it will prove to every buyer, namely, a *financial success*."—J. C. PATRICK.

"Every one should have *Photographics*. I would not take \$10 for my copy."—DR. M. BARNES, *Brunswick, Mo.*

"What a splendid book it is. I sat up two hours after my usual bed-time reading it, the first night after it came. It tells clearly what I want to know and in just such a way that I know just where to find the very thing. I thank you for your help in enlightening this great empire."—J. B. MATHER, *Missionary at Fungchow, China.*

"*Photographics* far exceeds our expectations, and is certainly a most valuable book to any progressive photographer. The more we read of it the better we are able to appreciate the ability and zeal of the man who has spent so much time and made such good use of his pen to advance our beautiful art."—J. R. HANNA, *Auckland, New Zealand.*

It will be mailed, post-paid, to any address in the world, on receipt of \$4.00. Many who have followed this advice have given much pleasure and profit.

PLEASE THINK IT OVER.

EDWARD L. WILSON, Author and Publisher, 912 & 914 Chestnut St.,
PHILADELPHIA, PA.

CARD.

AMONG the many new designs which have been prepared to meet late demands, are several representing dark tapestries, antique cabinets, wainscots and columns, several of the latter being arranged as set pieces.

We shall continue assiduously our search for novelties, and endeavor to furnish material for the highest form of portraiture.

LAFAYETTE W. SEAVEY,
Studio, No. 8 Lafayette Place,
NEW YORK.

READ! READ! READ!

—THE—

LIGHTNING SHUTTER.

Used for making exposures, either instantaneous or of any length of time desired. Works noiselessly and invisibly, being inside of the box and attached to the front board, but can be quickly changed from one box to another. Expressions can be studied and taken, when desired, without the knowledge of the sitter. Particularly adapted to the dry plate, and far superior to anything else in the market.

PRICES AS FOLLOWS:

No. 1, 4 inches diameter,	. . . .	\$8 00
No. 2, 4½ " " "	. . . .	9 00
No. 3, 5 " " "	. . . .	10 00

Larger Sizes Made to Order.

POSITION CHAIRS.

We are now manufacturing some of the neatest and most artistic designs in Position Chairs, upholstered in Silk, Plush, and Rep goods. Send for photographs and prices.

Appleton's Graded Metallic Leads,

FOR RETOUCHING. MADE IN THREE GRADES OF HARDNESS.

Any hand or method can be suited with them. Price 25 cents each.

We also keep on hand a Large Stock of **PHOTOGRAPHIC MATERIALS.** Your orders are solicited.

JORDAN & SHEEN,

No. 168 Race Street,

CINCINNATI, O.

157

PERRIGO & FAUPEL,

MANUFACTURERS OF

Fine Gold Frames

FOR PORTRAITS AND OIL PAINTINGS.

Deep Gold Bevel Matts

AND

Passepartouts.

Display, Velvet, English and Pebbled

MATTS.

NEW DESIGNS. LOW PRICES.

No. 81 North Howard St.,

BALTIMORE, MD.

THE CROSSCUP & WEST
ENGRAVING
Co.
PRACTICAL
WOOD-ENGRAVERS, PHOTO-ENGRAVERS,
AND SOLE LICENSEES OF THE
IVES' PROCESS
OF ENGRAVING.

702 CHESTNUT ST., PHILADELPHIA.

THE IVES' PROCESS, THE LATEST INVENTION IN ENGRAVING. PAT. FEB. 8, 1881 & AUG. 9, 1881.
ENGRAVINGS MADE DIRECT FROM NATURE, PHOTOGRAPHS OR DRAWINGS MADE WITH BRUSH.

NO PENCIL DRAWING REQUIRED.

NO HAND FINISHING BY THE ENGRAVER NECESSARY.
**THE ONLY PROCESS BY WHICH ENGRAVINGS CAN
BE ARTISTICALLY MADE AT ONE-HALF THE
COST OF WOOD CUTS.
STANDS ABSOLUTELY WITHOUT A RIVAL.**

— — — — —
SEND STAMP FOR CIRCULAR.

AMATEUR OUTFITS.

The Most Complete and Varied Assortment in Market!

SOLE AGENTS FOR

DALLMEYER'S CELEBRATED LENSES,

THE ONLY ONES FOUND TO BE UNIFORMLY GOOD.

SUCCESS AND NOVEL CAMERAS.

E. & H. T. ANTHONY & CO.

591 Broadway,

DEALERS IN
EVERYTHING
PERTAINING
TO
PHOTOGRAPHY.

NEW



Opp. Metropolitan Hotel.

PUBLISHERS OF
ANTHONY'S
PHOTOGRAPHIC
BULLETIN,
\$2.00
Per Annum. *Illus.*

YORK.

ANTHONY'S STANDARD CHEMICALS,

PREPARED EXPRESSLY FOR

PHOTOGRAPHIC PURPOSES.

→ EASTMAN'S TROPICAL DRY PLATES ←

These Plates will never *Frill* no matter how hot the weather may be.

* EASTMAN'S SPECIAL DRY PLATES *

These Plates are the most *Sensitive* of any made for Portraiture.

E. & H. T. ANTHONY & CO., SOLE AGENTS.

160

WALKER'S

"Insoluble" Dry Plates.



A NEW AND SUPERIOR BRAND.

MANUFACTURED BY SPECIAL APPLIANCES—OF THE GREATEST
UNIFORMITY—EITHER RAPID OR INSTANTANEOUS.

Exceedingly sensitive, but capable of great latitude in exposure.
Give exquisite brilliancy, and great detail in the shadows.

They are "**INSOLUBLE**," and hence unaffected in the hottest climates. They will withstand water at the "**BOILING POINT**." By the use of hot water after fixing the "Hypo" is washed out with ease and certainty. The plates may then be dried over a gas jet in two or three minutes.

"**HALATION**" and "**FRILLING**" are absolutely unknown. Correspondence solicited. These Plates are manufactured exclusively by

The Walker Dry Plate Co.
ROCHESTER, N. Y.

APPLY TO YOUR STOCK DEALER.

JOHN G. HOOD.

ESTABLISHED 1865.

WM. D. H. WILSON.

WILSON, HOOD & CO.,

No. 825 Arch Street, Philadelphia,

SOLE AGENTS FOR THE

Ross & Steinheil Lenses,

OFFER FOR SALE ALL VARIETIES OF

PHOTO. GOODS

For Dry and Wet-Plate Photography.

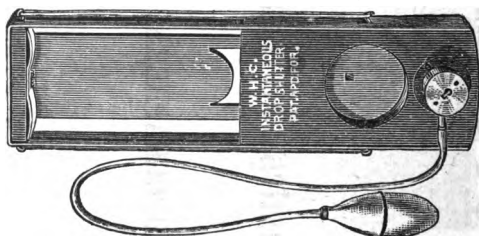
OUTFITS MADE BY

AMERICAN OPTICAL CO., SEMMENDINGER,
ANTHONY, BLAIR, AND WALKER.

DRY PLATES MANUFACTURED BY

CRAMER & NORDEN, BEEBE, CARBUTT, AND EASTMAN.

“W. H. C.” INSTANTANEOUS DROP.



Pneumatic, small size,	\$6 00
Pneumatic, large size,	7 00

COMPLETE PRICE LISTS MAILED FREE.

GAYTON A. DOUGLASS.

HENRY G. THOMPSON.

DOUGLASS, THOMPSON & CO.,

Nos. 229 & 231 STATE ST., CHICAGO,

MERCHANTS IN ALL

Requisites Pertaining to the Art-Science of Photography.

PHOTOGRAPHERS' BOOKSELLERS, STATIONERS, AND NEWSDEALERS.

PUBLISHERS OF

*Photographers' Monthly Bureau of Information, Hints on Burnishing
Photographs, and Manual of Photo. Micography.*

THE ABOVE FREE TO ANY ADDRESS. SEND FOR OUR CATALOGUES AND CIRCULARS.

WILSON'S PHOTOGRAPHIC PUBLICATIONS.

A TREATISE ON EVERY BRANCH OF PHOTOGRAPHY.

THE PHILADELPHIA PHOTOGRAPHER. A monthly Magazine, illustrated by photographs of superior merit. \$5.00 a year; \$2.50 for six months. Stands ahead of all its kindred. Nineteen years success is a sufficient guarantee of its value and use to the practical, working, growing photographer. Do not go without its valuable help.

THE PRACTICAL PRINTER. By C. W. HEARN. Price, \$2.50. Second edition now ready. This is a most handy and reliable book. It goes into all the operations of plain and fancy silver printing, and is *full* of good.

PHOTOGRAPHERS' POCKET REFERENCE BOOK. By DR. H. VOGEL. Price, \$1.50. For the dark-room. It meets a want filled by no other book. Full of formula—short, practical, and plain.

AMERICAN CARBON MANUAL. Price, \$2.00. For those who want to try the Carbon printing process, this work gives the most detailed information.

THE FERROTYPYER'S GUIDE. Price, 75 cents. Cheap and complete. For the Ferrotypy, this is the only standard work. Seventh thousand.

PICTORIAL EFFECT IN PHOTOGRAPHY. By H. P. ROBINSON. For the Art Photographer. Cloth, \$1.50; paper cover, \$1.00.

WILSON'S PHOTOGRAPHICS. The newest and most complete Photographic Lesson-book. Covers every department. 352 pages. Finely illustrated. Only \$4.00. By EDWARD L. WILSON.

WILSON'S LANTERN JOURNEYS. By EDWARD L. WILSON. In two volumes. Price, \$2.00 per volume. For the lantern exhibitor. Gives incidents and facts in entertaining style of about 2000 places and things, including 300 of the Centennial and Paris Exhibitions.

BIGELOW'S ARTISTIC PHOTOGRAPHY. Price \$4.00 For the lover of art. Beats his "Album of Lighting and Posing." Superb! With twelve photographs and instructions.

BURNET'S HINTS ON COMPOSITION. Price, \$3.50. All should study it. A splendid work, largely illustrated, giving all the rules and principles of artistic posing.

STUDIES IN ARTISTIC PRINTING. By C. W. HEARN. Price, \$3.50. Embellished with six fine cabinet and promenade portrait studies.

THE PHOTOGRAPHIC COLORISTS' GUIDE. By JOHN L. GIBON. Cloth bound, \$1.50. The newest and best work on painting photographs.

PHOTOGRAPHIC MOSAICS, 1883. Cloth bound, \$1.00; paper cover, 50 cents. Back volumes same price. Better than any of its predecessors.

EDWARD L. WILSON, Photo. Publisher,

912 & 914 Chestnut Street,
164

PHILADELPHIA, PA.

A S H E
HAS
RECEIVED THE HIGHEST MEDALS
FOR BACKGROUNDS.

For artistic effect, novelty, strength, and
fitness for the purpose intended,
with economy of cost,

W. F. ASHE'S
BACKGROUNDS
AND
ACCESSORIES

TAKE THE LEAD.

106 Bleecker Street,
NEW YORK CITY.

JOSÉ P. OURDAN,

MANUFACTURER OF

HYDRO-BROM

GELATINE DRY PLATES

EXTREME RAPIDITY,

WET-PLATE QUALITY,

COMMON-SENSE PRICES,

—AND—

FREEDOM FROM DEFECTS.

Photographers' Old Negative Glass coated with Emulsion of any quality. The market price of Glass allowed, less expenses of cleaning and expressage.

◆+NET CASH PRICE LIST.+◆

	DOZEN.		DOZEN.
3½ x 4½,	\$0 55	8 x 10,	\$3 00
4 x 5,	75	10 x 12,	4 40
4½ x 5½,	80	11 x 14,	5 80
4½ x 6½,	1 00	14 x 17,	8 40
5 x 6,	1 10	17 x 20,	14 50
5 x 7,	1 35	18 x 22,	16 00
5½ x 7,	1 40	20 x 24,	19 25
5 x 8,	1 50	30 x 60,	each, 5 50
6½ x 8½,	2 00		

A comparative test upon each box shows the exact sensitiveness of Plates within, to enable Photographers to order Plates of suitable rapidity, and ensure uniformity of results.

OFFICE AND FACTORY,

No. 453 Fulton Street, Brooklyn, N. Y.

B—THE BEEBE DRY PLATE—B

MANUFACTURED BY THE

CHICAGO DRY PLATE AND MANUFACTURING CO.,

Office, No. 2449 COTTAGE GROVE AVENUE,

 **CHICAGO.** 

**A Standard Plate, Carefully Made, Thoroughly Tested,
Handsomely Packed, Wet Plate Effect, ALL DEALERS HAVE THEM.**

PLATES PREPARED SPECIALLY FOR TRANSPARENCIES NOW READY.

J. C. SOMERVILLE,

No. 1009 OLIVE STREET, ST. LOUIS.

FIRST-CLASS

Photographic Supplies,

AT LOWEST PRICES.

Dry-Plate Goods and All the Leading Dry Plates.

AND

**THREE PER CENT. OFF ON ALL ORDERS
AMOUNTING TO TEN DOLLARS**

Or over, provided cash accompanies the order.

OUTFITS A SPECIALTY.

SEND MEMORANDA FOR SPECIAL PRICES,

SEE OUR BARGAIN LIST.

A FULL LINE OF ALL STAPLES.

NO SUBSTITUTING.

168

BENJ. FRENCH & CO.,

319 WASHINGTON STREET,

BOSTON, MASS.

*SOLE AGENTS IN THE UNITED STATES FOR THE
CELEBRATED NEW AND IMPROVED*

VOIGTLANDER & SON

PORTRAIT LENSES,

ALSO, THE WONDERFUL

EURYSCOPE.

ALSO,

Darlot

PORTRAIT AND VIEW LENSES.

All GENUINE DARLOT LENSES have "B. F. & Co." marked on the tubes.

IMPORTERS and DEALERS in every description of goods used in the Photographic business.

PRICE LIST sent on application.

NEW YORK'S FAVORITE.

THE MANHATTAN GELATINE DRY PLATES

The Manhattan Brand of Dry Plates has found general favor amongst the best of our Dry Plate Photographers, who attest to their good qualities. Having enlarged our works, the increased facilities enable us to offer to the artist and amateur a superior Dry Plate at reduced price, making them, quality considered, the cheapest plates in the market, at the same time easy to develop and free from frilling, if treated according to directions which accompany each package. Send for our pamphlet, free to all.

PRICE LIST.

SIZE.	Doz.	SIZE.	Doz.
3½ x 4½, . . .	\$0 65	8 x 10, . . .	\$3 60
4 x 5, . . .	95	10 x 12, . . .	5 20
4½ x 5½, . . .	1 00	11 x 14, Double Thick Glass, 6	80
4½ x 6½, . . .	1 25	14 x 17, " "	10 00
5 x 7, . . .	1 65	17 x 20, " "	17 50
5 x 8, . . .	1 85	18 x 22, " "	20 00
6½ x 8½, . . .	2 40	20 x 24, " "	24 00

11 x 14 and larger, packed in boxes containing half-dozen.

ALSO PLATES FOR STRIPPING FILM.

All Plates Guaranteed.

For Sale by all Dealers.

MANUFACTURED BY

ULRICH & COLCLOUGH, Depot, No. 156 Bowery, New York City.

THEY ARE SUCCESSFUL!

◆ **MONROE'S** ◆

UNIVERSAL

GELATINE DRY PLATE.

READ:

ITHACA, N. Y., September 22, 1882.

MR. P. B. BRADLEY—*Dear Sir*: I am very much pleased with the Monroe plates, and find them extraordinarily sensitive and giving soft effects with full detail. Have made excellent out-door negatives on a very dark day in less than one-half second. Please send, etc.,
Yours truly, SPENCER B. NEWBURY,
Chem. Lab. Cornell University.

JAMESTOWN, N. Y., October 26, 1882.

FRIEND MONROE: Enclosed please find P. O. Order, for which send me one gross 5 x 8, one-half gross 8 x 10. Am much pleased with the working of your plates—hardly ever make a miss. Am now using two dry to one wet plate; in fact, don't think I shall use any more wet plates, except for copies. Hurry plates along.

Truly your friend,

J. ROBERT MOORE.

WARRENTON, GA., July, 1882.

GEO. H. MONROE, Rochester, N. Y.—*Dear Sir*: I must write you about how the plates behave in my hands. If there is any such thing as reaching perfection, you certainly have reached that goal. I have had *some* experience with three or four different well-known makes of plates. The — plates are a good plate, but have one serious draw-back—ice-water has to be used, and it is not always to be had in small towns in the South. I lost two fine negatives yesterday by not having cold enough water. I, right after, developed two of yours with same water and developer, and produced two *fine* negatives, and *so* easy. I have often read of plates developing as easy as wet-plates. I would *much* rather develop your plates than wet ones. They develop cleaner, quicker, and better, and I am more sure of a good negative than with the bath. I have not lost a single negative from your plate, while I have had many failures with others; so it cannot be altogether my inexperience. I shall soon send you another order for plates.

Respectfully, yours,

W. H. CLARK.

For fifty cents in stamps, we will send, express charges prepaid, four 5 x 8 plates for trial. Send for Circular giving Price, etc.

Manufactured by

GEO. H. MONROE,

ROCHESTER, N. Y.

Proprietor and Manufacturer of the UNIVERSAL DOUBLE
DRY-PLATE HOLDER and REVERSIBLE ADAPTER.—
Patented June 21, 1882.

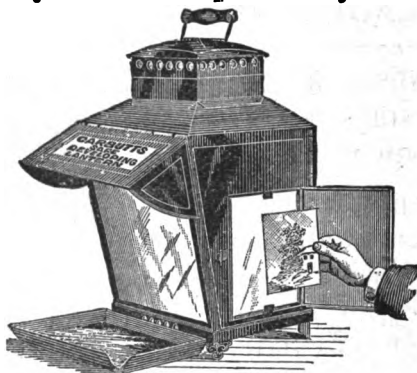
Plates kept in Stock by SCOVILL MANUFACTURING CO. and all Stock-dealers.

✦ **LIGHT IN THE DARK-ROOM!** ✦

SAVE YOUR EYE-SIGHT BY USING

CARBUTT'S

Multum in Parvo Dry-Plate Lantern



Patented April 25, 1882.

THE following are some of the advantages possessed by this Lantern: It is simple and easy to manage, nothing complicated, yet has three separate and distinct forms of light. It is adapted for the use of either oil or gas; is about nine inches square by fourteen high, with eight by ten deep ruby glass in front. Each Lantern is provided with a coal-oil lamp, with improved patent burner, and silvered reflector, which may be revolved in any direction, and operated from the outside. By removing the revolving lamp-bed, a hole will be found through which a gas burner can be introduced.

It can be used for seven or more different operations in photography, several of which have never been combined in any one lantern, to wit:

1. Lantern arranged for developing, and, after fixing, examining negatives by opal light.

1. A safe light for the preparation of gelatino-bromide emulsion.
2. A safe light for the coating of gelatino-bromide plates.
3. A safe light for developing the most sensitive plates, while for preparing developer or doing other work, the room can be instantly flooded with white light and as quickly changed to the red, giving abundance of light by which to develop the largest-sized plates used. The adjustable hood effectually shields the eyes from the glare of the red light, a matter of the greatest importance to those having a large number of negatives to develop, or other work to perform necessitating red light.
4. An opal light by which to examine negatives or positives after fixing, enabling the operator to judge of their quality, thereby avoiding the necessity of leaving the dark-room in search of white light.
5. A clear transparent light for making positives on glass (gelatino-bromide); this feature is a valuable one; any photographer can materially add to his revenue by making these most beautiful products of photography.
6. The making of enlarged negatives from gelatine positives, placed in front of opal light.
7. The making of the photo-micrographs with the clear, transparent light, which can readily be accomplished with the gelatino-bromide plate and the microscope.

Price, \$6.00, boxed ready for shipment.

For Sale by all Dealers.

INVENTED AND MANUFACTURED BY

JOHN CARBUTT,

628 & 630 Chestnut St., Philadelphia.

THE "KEYSTONE" GELATINE DRY PLATES

Made in **THREE DEGREES OF SENSITIVENESS,**
By **JOHN CARBUTT, 628 & 630 Chestnut St.,**
PHILADELPHIA.



For **LANDSCAPE, COPYING, and TRANS-**
PARENCIES, For MAGIC LANTERN or
WINDOW DECORATION. (Red Label.)



For **STUDIO WORK, LANDSCAPES with**
Figures, MACHINERY, and GENERAL
PHOTOGRAPHY. A most useful and reli-
able Plate. (White Label.)



For **INSTANTANEOUS WORK, CHIL-**
DREN'S PORTRAITS, DARK DAYS IN
THE STUDIO, INTERIORS, Etc., when a
highly sensitive plate is a necessity. (Blue
Label.) All Plates Guaranteed Perfect.

REVISED PRICE-LIST—PRICE PER DOZEN.

SIZE.	A. & B.	J. C. B.	SIZE.	A. & B.	J. C. B.
3½ x 4½ inches,	\$0 65	\$0 72	8 x 10 inches,	\$3 60	\$4 00
4 x 5 "	0 95	1 04	10 x 12 "	5 20	5 80
4½ x 5½ "	1 00	1 12	11 x 14 "	6 80	7 60
4½ x 6½ "	1 25	1 40	14 x 17 "	10 00	11 00
5 x 7 "	1 68	1 85	14 x 18 "	11 00	12 00
5 x 8 "	1 80	2 00	17 x 20 "	16 00	18 00
6½ x 8½ "	2 40	2 70	18 x 22 "	18 00	20 00
7 x 9 "	3 00	3 40	20 x 24 "	22 50	25 00

11 x 14 and larger sizes are made on double-thick glass, and put up in half dozen packages.

SCOVILL MANUFACTURING CO., New York,

Trade Agents for Carbutt's Keystone Bromo-Gelatine Dry Plates
FOR SALE BY ALL DEALERS.

CELLOIDINE!

**THIS LATEST SUBSTITUTE FOR GUN COTTON HAS
PROVED A GRAND SUCCESS.**

It is manufactured by the SCHERING CHEMICAL Co., of Berlin, by patented process which frees the Pyroxyline of all starchy and organic impurities, making a beautiful structureless film, and making a Collodion of at least double the rapidity of that made with any gun cotton, and giving an extremely fine deposit. It comes in the form of solid cakes, and can be sent to any part of the world, being perfectly non-explosive.

We publish below a few of the latest unsolicited testimonials received, which are a type of scores in our possession:

NASHVILLE, TENN., December 20th, 1881.

MESSRS. BACHRACH & BRO.: Your Celloidine was at once transformed into Collodion, and if the article is uniform in quality, I will say that I am done with gun cotton. I have always had a pride in my good Collodion, both in quality and quickness. All my operators have so acknowledged, and if I say that this beats all Collodions I ever worked, it is saying much. It is more sensitive, but its beauty in its fine deposit and detail in shadows is the principal advantage; and I say every photographer who wants to excel should use it. Please send me two more packages. Respectfully yours,

T. M. SCHLEIER.

CHICAGO, December 3d, 1881.

BACHRACH & BRO.—*Gents*: Inclosed please find two dollars for two packages of your Celloidine. If this is as good as the last, I shall be very thankful for your enterprise in introducing this to the art, as in all my experience I have found no cotton equal to it.

Yours truly,

A. HESLER.

BOONE, IOWA, December 20th, 1881.

Gents: Please find inclosed two dollars for two packages of your Celloidine. I consider it and the Collodion Formula with it the next thing to "Dry Plates." *Since I have begun to use it I have gun cotton for sale.* It works equally well for ferrotypes, and is far ahead of Lambert's Lightning Humbug. Truly yours,

J. PAUL MARTIN.

We could fill a book with such testimonials constantly coming to us.

Sent Free by Mail for \$1.00 per Package, for Making 4½ Pounds of Collodion.

Full directions accompany each Package. The trade supplied.



Trade Mark.

BACHRACH'S

SPECIAL

8 Kilo Dresden Double Albumenized Paper.

The finest, most brilliant, and best paper for pictures
8 x 10 and smaller ever introduced. Try it!

Sample Dozen, \$1; Mailing, 15 Cents.

SEND ALL ORDERS TO

Bachrach & Bro., cor. Eutaw & Lexington Sts., Baltimore, Md.
IMPORTERS AND SOLE AGENTS FOR THE UNITED STATES.

Send for our price list of photo. materials, with the "Exposé," gratis.

Ph. & A. Chemical Manufacturing Co.

MANUFACTURERS OF

PURE CHEMICALS,

Oxalate of Potash,

Protosulphate of Iron,

Iron and Ammonia,

Bromides and Iodides.

Negative Gun Cotton

OF THE PUREST QUALITY,

For Photographic Uses.

→*OFFICE,*←

No. 116 North Delaware Avenue,

PHILADELPHIA.

175

CLUB RATES

\$5.50 per Annum

FOR THE TWO PHOTOGRAPHIC JOURNALS OF AMERICA.

— THE —

Philadelphia Photographer

EDWARD L. WILSON,

EDITOR AND PUBLISHER,

Nos. 912 & 914 CHESTNUT STREET,

PHILADELPHIA, PA.

The Photographic Times

— AND —

American Photographer,

J. TRAILL TAYLOR, Editor.

SCOVILL MANUFACTURING CO.

Nos. 419 & 421 Broome St., New York.

176

REFERENCE DEPARTMENT

taken from the Building

[illegible]

form 410